

• JANUARY 1959

BUTANE-PROPANE

A CHILTON PUBLICATION

News

MANAGEMENT AND
PLANNING ISSUE

The 1958
Phillips Report

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

HERE'S TO SOME PLEASING
READING

LEDGER

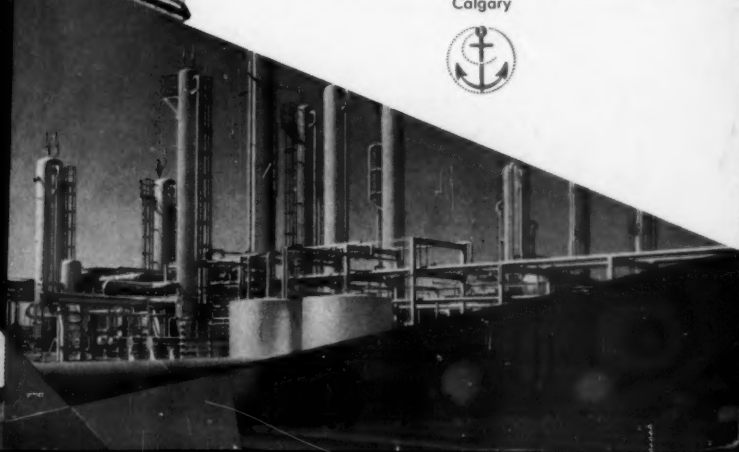
1959

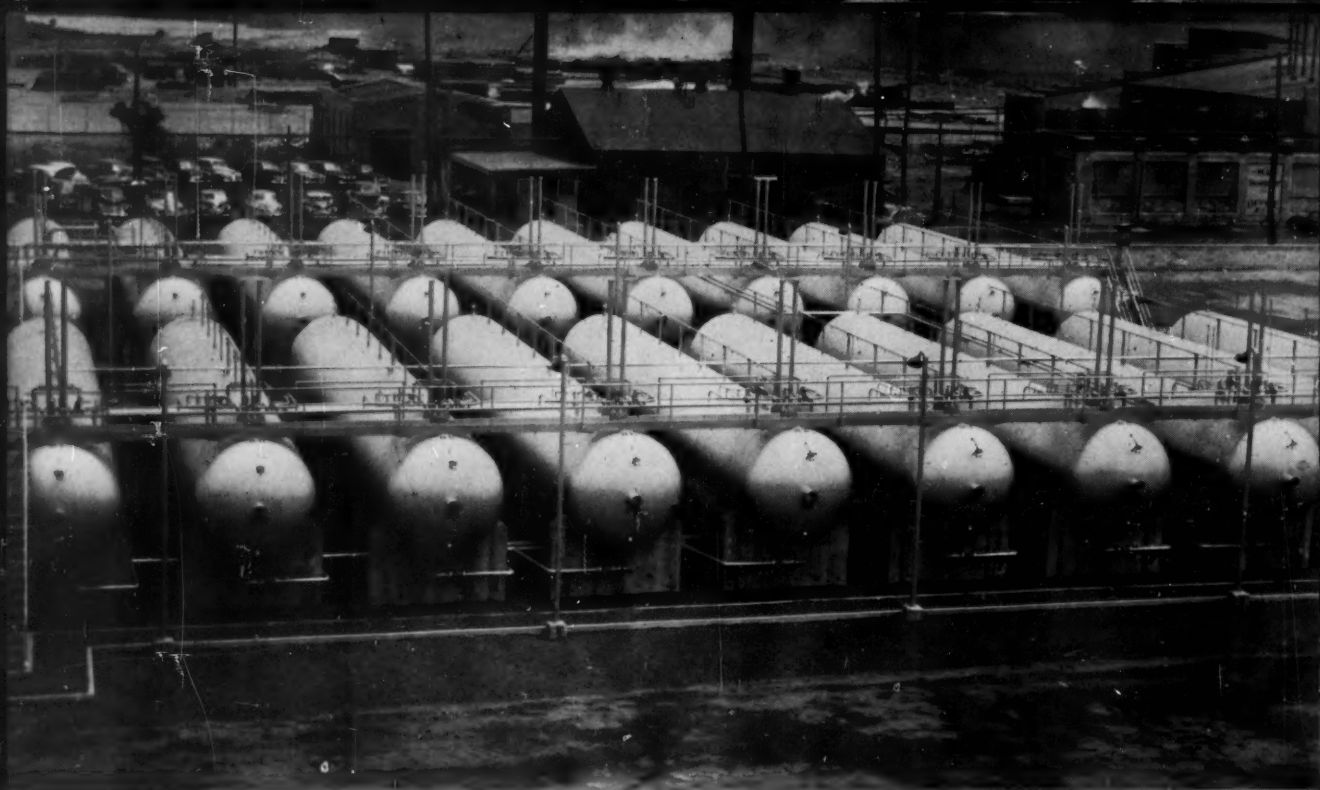
And may all your ink be black! We offer our best wishes for prospering business during this new year; and for health and happiness to you and yours. We'll do our best to help with the former. Success in that should help the latter. We pledge increasing facilities, improved methods as technology permits, the best service advice and assistance you can get. Start right! Call Tulsa CHerry 2-7261 about a contract.

ANCHOR

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Every bulk plant or utility which stores LP-Gas in large volume can profit from these plus values built into every Hackney bulk storage tank:

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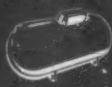
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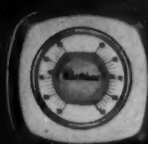


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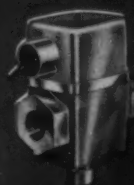
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JANUARY

1

1959

1. This year...
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JANUARY 1959

BUTANE-PROPANE News

Volume 21-Number 1

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FASTER FILLING

FOR DOMESTIC
ASME SYSTEMS

NEW FASTER FILLING SERIES 8594

Includes high-capacity *double back check* filler valve, vapor equalizing and excess flow valve, service line shut-off valve, fixed liquid level gauge, liquid transfer connection protected by RegO Chek-Lok excess flow valve, and provision for liquid baffle or eduction pipe. Optional features: pressure gauge, single or two-stage pressure regulation, Tri-O-Seal inlet connection. Supersedes Series 2594.

NEW FASTER-FILLING SERIES 8593

Includes high-capacity *double back check* filler valve, vapor equalizing and excess flow valve, service line shut-off valve, fixed liquid level gauge, and provision for liquid baffle or eduction pipe. Optional features: pressure gauge, single or two-stage pressure regulation, Tri-O-Seal inlet connection. Supersedes Series 2593.



NEW TOP-WRENCHING FOR ECONOMICAL INSTALLATION

Tank fabricators will like especially the top hex-wrenching section on these new MultiValve Assemblies. This permits quick, convenient, cost-saving assembly with power wrenches. RegO has available a special modified deep socket that goes on right over the filler cap, and fits snugly. Another RegO "first" to help you cut costs!

DO YOU KNOW
It will pay you
dividends to join!



EXCLUSIVE

RegO Chek-Lok now
standard on all Multi-
Valve Assemblies sup-
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new REGO MULTI VALVE

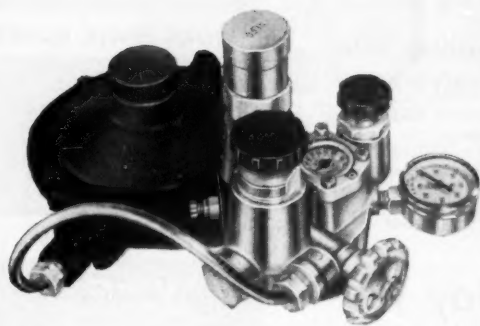
UNITS SERVE YOU BETTER THAN EVER!

Faster filling than previous models...higher vapor return rate...new Chek-Lok. RegO brings you all three innovations *plus* long-recognized MultiValve unit excellence. Already famous for use-proved economy and enduring, dependable service, new MultiValve units as RegO makes them mean even greater over-all convenience and savings.

For the tank fabricator—easy socket-wrench installation, established field preference. For the fuel distributor—RegO quality, trouble-free filling in shorter time. For the user—reliability year after year...everybody benefits! On all types of installations, MultiValve units now serve you better than ever...and of course they're made only by RegO!

NEW FASTER-FILLING 8475 & 8477 SERIES

This single head, requiring only one tank opening, contains complete system controls. Regulator bracket is furnished, and pigtail is bent to shape. Both the Series 8475 & 8477 include: high-capacity *double back check* filler valve, vapor equalizing and excess flow valve, service line shut-off valve, safety relief valve, provision for liquid baffle or eduction pipe and slip-tube or float-type liquid level gauge. Fixed liquid level gauge, pressure gauge, and single or two-stage regulation are optional. Series 8477 also includes a liquid transfer connection protected by a separate excess flow valve with RegO Chek-Lok. Supersedes 1475 & 1477 Series and 8575 & 8577 Series.



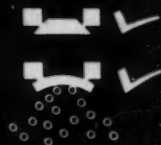
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For ICC containers up to 420-lb. LP-Gas capacity and small ASME containers...Series 2555. For ICC containers up to 200-lb. LP-Gas capacity, and having a 3/4" pipe-thread opening...Series 7555. For money-saving reliability it pays to specify RegO, whatever the service requirements.

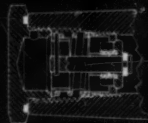
YOU GET
EXTRA
PROTECTION
FROM THESE

EXCLUSIVES



REGO DOUBLE BACK CHECK FILLER VALVE

Two separate check valves — not merely a single check valve which works with an excess flow valve. Both open easily with flow of LP-Gas into tank; close instantly when flow stops. Prevents dangerous and unexpected discharge of liquid. Available only with RegO.



REGO CHEK-LOK

Permits attachment of shut-off valve to liquid transfer connection when system is in service. Holds check mechanism in "closed" position while plug is removed. Opens automatically when shut-off valve or RegO adapter is assembled. Standard on Series 8477 and 8594.



REGO TRI-O-SEAL

Provides a leakproof O-ring seal between valve body and container opening. Crush-ring allows one full additional turn of MultiValve body for proper orientation. Optional on Series 8593 and 8594 to speed quick installation with RegO.



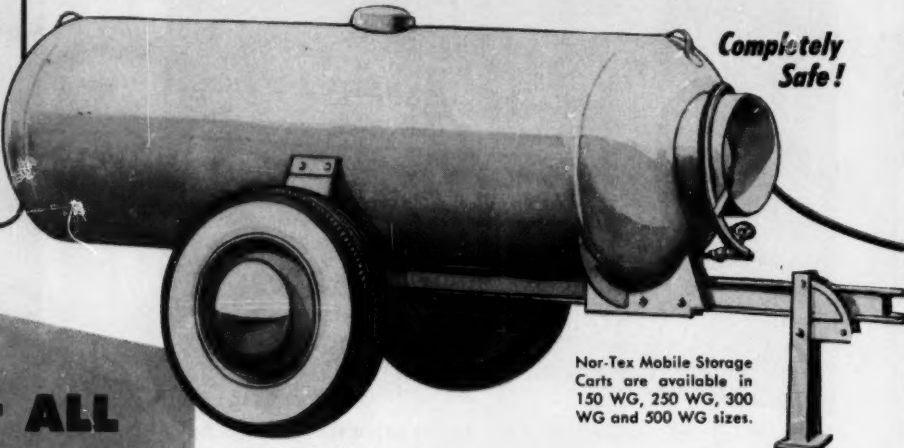
All RegO MultiValve units are listed by Underwriters Laboratories, Inc., and supplied fully assembled and tested. For safety, service, and wide selection you can always depend upon RegO!

BALANCE YOUR LOAD THE

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Well-baffled... Easy to "spot" with car, truck or tractor. Safely place your fuel right where you need it! Heavy duty axle with standard Chevrolet hub and 15" wheels. I-beam tongue... Recessed relief valve... 1 1/2" hose... and 3/4" OIC valve and coupling.

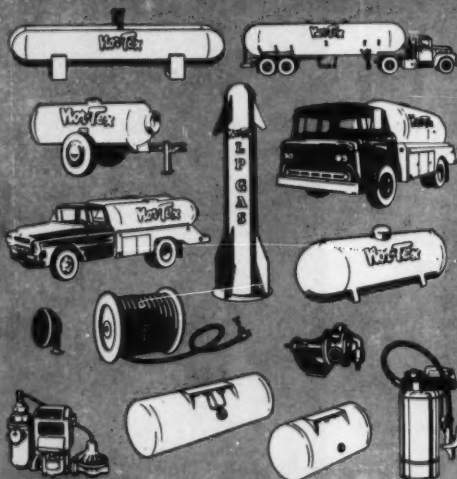
"Keeping up-to-date" proves more and more to be an absolute essential to PROFIT in today's progressive LPG bulk plant operation. Manufacturing tanks... operating bulk plants... and running retail appliance stores has taught Nor-Tex much about PROGRESS and its direct relationship to PROFIT. These combined experiences have resulted in many helpful, time-saving product and service "extras" and sharing them has won us many customer friends.



Completely Safe!

Nor-Tex Mobile Storage Carts are available in 150 WG, 250 WG, 300 WG and 500 WG sizes.

LOOK TO Nor-Tex For ALL Your LPG NEEDS

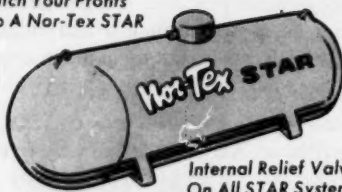


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Hitch Your Profits
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Internal Relief Valve
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Built to last a lifetime! The safest, finest quality tank you can buy. Satisfaction guaranteed. Built to meet all national, state and local codes. Buy one or a carload.

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Everyone is talking about the excellent Nor-Tex attention-compelling, sales-boosting LPG Service Station... flexible to any type of installation... occupies only 72" diameter.

May We Help You?

Interested attention, experienced assistance and helpful suggestions are yours for the asking.



HAUL EXTRA GALLONS

**Nor-Tex
STANDARD
TWIN**

DELIVER MORE GALLONS

**Nor-Tex
PAYLOAD
SPECIAL**

WORK FEWER HOURS

**Nor-Tex
CUSTOM
TWIN**

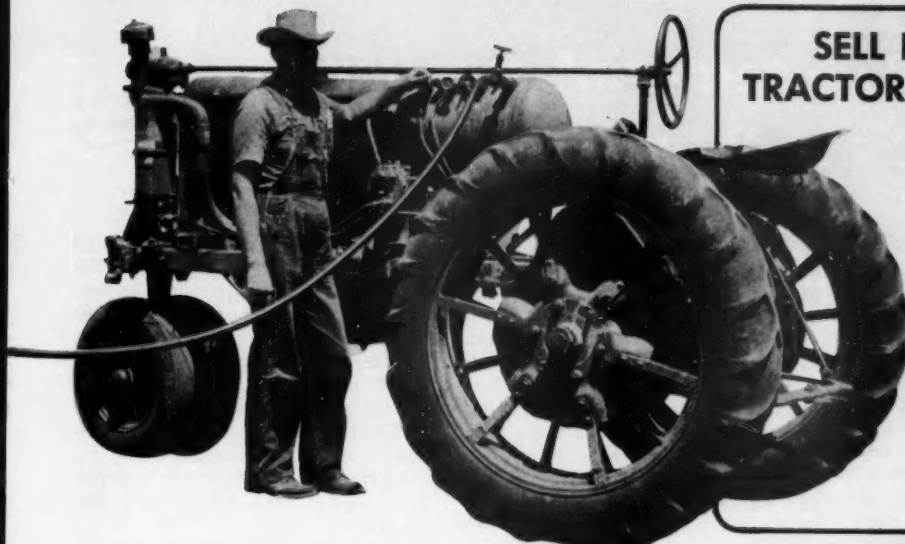
DRIVE LESS MILES

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2500 WG Units Now Weigh Under 23,000 lbs. Loaded!

Every bulk plant operator is interested in these four new, sleek, LIGHTWEIGHT, streamlined, twin or single barrel Nor-Tex LPG Delivery Units with their high flow plumbing. Even 3000 WG units and over are within the 18,000 lb.

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You can now haul
MORE GAS and LESS STEEL
Than ever before!



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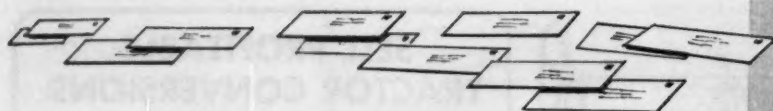
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Extra Savings!
We Are Truck Distributors!

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A PLAN TO MEET EVERY NEED!

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DENTON, TEXAS
DUpont 2-5416

**BPN**

Letters

Pressure changes require regulator corrections

Nicaragua

In our previous letter (see November 1958, page 10) we neglected mentioning to you that we distribute L. P. gas in 100 lb propane capacity cylinders—239 lb wc—each cylinder filled with 100 lb net of gas regardless of the temperature or liquid specific gravity. In other words, we deliver to the customer 100 lb of gas by weight, whether it is propane or 70 per cent butane-30 per cent propane mixture.

In the very few instances that we have delivered propane, most of our customers have complained about the so many days less they got out of the cylinder. Once we switch to the mixture we do not have complaints of that nature.

Would you be so kind as to explain to us why 100 lb of the mixture lasts longer than 100 lb of propane?

G. Z. O.

There are two effects which may help to cause the apparent faster consumption of propane than the mixture used by your customers.

It is assumed that your regulators and the appliances are adjusted for the pressure and composition of the mixture.

At 60 deg. F propane will have a vapor pressure of about 92 psig while the 70-30 butane-propane mix will have a pressure of only 38 psig. At 100 deg. F the propane pressure will be 172 psig and the mixture about 85 psig. Refer to the pressure curves of your regulators and see what this does to the delivery pressure from your regulator. It may increase the regulated pressure as much as 1 to 2 in. wc.

We estimate 100 lb of the mixture will deliver about 700 cu ft of vapor and 700 lb of propane will deliver about 862 cu ft of propane vapors. With a 2 in. increase in pressure, the 862 cu ft of propane will go through an orifice about as quick as the 700

cu ft of butane. So, if the regulator is not corrected to deliver the proper pressure, the propane gas will be used up as soon as the 700 cu ft of mix.

The American Gas Association handbook, "Gaseous Fuels," has considerable discussion and several formulae regarding the air injecting properties of gases in domestic type burners. It boils down to the expression that, "... the air injecting ability of a burner varies as the square root of the mass velocity divided by the heating value per cu ft of the gas."

Based on the foregoing, it would appear that the propane, in addition to being delivered to the orifice at a higher pressure, has a higher air injection characteristic. A rough calculation indicates this higher air injection may amount to 8 per cent or more. This may be sufficient to build the excess air up to the point the burner will lose efficiency and require more time to do a specific job of heating.

We suggest you check some of these items, especially the pressure. Then observe the flame carefully and adjust the air shutter to produce the proper flame when you switch from one fuel to the other.

Run some burner checks of your own. First setting up with the mixture, then running the burner a like period of time without changing adjustments and again after changing adjustments. You may use small containers, accurately weighed, or a vapor meter if one is available to check it out.—Ed.



Dirt particles may cause meter inaccuracies

Australia

Please give me your views and recommendations on a problem which we have encountered in pumping L. P. gas (commercial propane) at low flow rate.

We pump propane from 25,000

gal. storage tanks having fittings and relief valves operating at 250 psi gauge through a pump driven by a 5 hp flame-proof motor at 1440 rpm, the pumping system having differential by-pass operating at 45-75 psi thence passing through a 1 1/4 in. L. P. gas liquid meter.

The L. P. gas is pumped approximately 1000 ft through a 1 1/2 in. pipe line passing through vaporizing nozzles into the town's gas stream.

The rate of flow varies from 3 gal. per minute to 12-15 gal. per minute, at different times, an attempt being made to achieve a constant rate for any one parcel.

It has been found that errors of 10 per cent under registration are obtained through the whole range of flows. We have attempted to recalibrate the meter by the usual adjustment in the mechanism; by replacing the rotor with that of another similar meter; and by making a new rotor, but it appears that there is an inherent tendency to excessive slip at low rates of flow.

We have noted that the Bowser "Xacto" meter figure 460/15 has a range suitable for the purpose, and being a multi-piston type should be less susceptible to slip.

We would appreciate your comments and recommendations to overcome our difficulty and achieve proper metering accuracy.

W. B. C.

We do not believe that switching meters is going to be the answer to your problem. There are several things which may cause low registration or under registration.

The Bowser "Xacto" meter may be more accurate at extremely low rates of flow, but it, too, will become inaccurate if there is scoring of the meter chamber or pistons. Also, if the L. P. gas is such that gummy deposits form on the pistons and cause them to work hard, there will be slippage.

We believe that the trouble may be two-fold.

(Continued on page 12)



Little Joe says, "NO INTERRUPTIONS PLEASE"

You get Automatic Changeover with the Type 965B



NOW AVAILABLE WITH REMOTE INDICATOR

803 remote indicator supplied
with 10 feet of tubing, fittings
and bracket for installing out-
side of kitchen window.



Fisher has taken a fine regulator and made it even more useful

Multiple cylinder systems are operated with full automatic changeover when the Fisher Type 965B is used. Service is continuous from one cylinder to the next.

Optional remote indicator permits in-the-home check of gas supply. This extra measure of customer convenience means extra profit to you.



For additional details on
the Series 965B with Type
803 remote indicator, or
any LP Gas control equip-
ment, write . . .



IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD...CHANCES ARE IT'S CONTROLLED BY...



FISHER GOVERNOR COMPANY Marshalltown, Iowa **SINCE 1880**

JANUARY, 1959

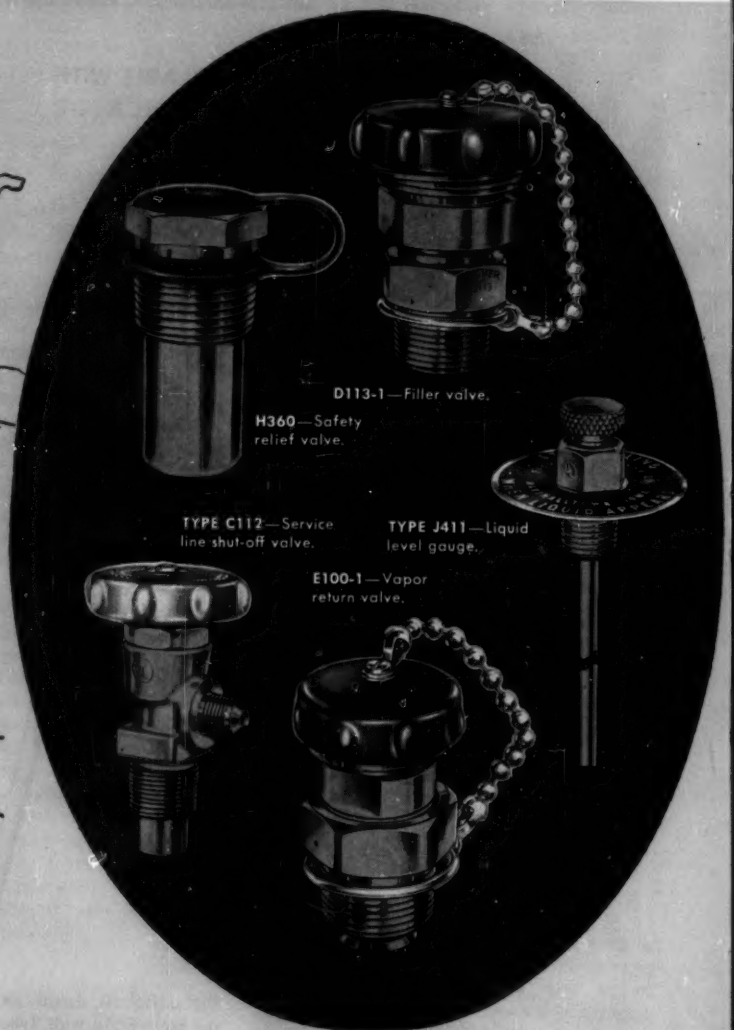
STEP ON IT!



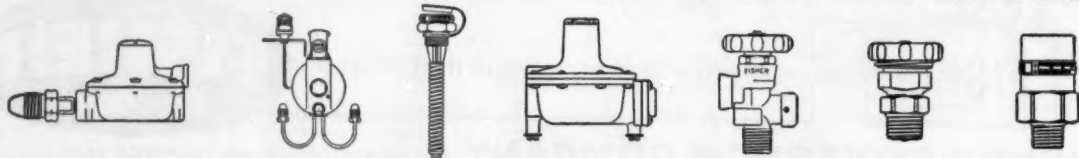
TRUCKS AND BUSES



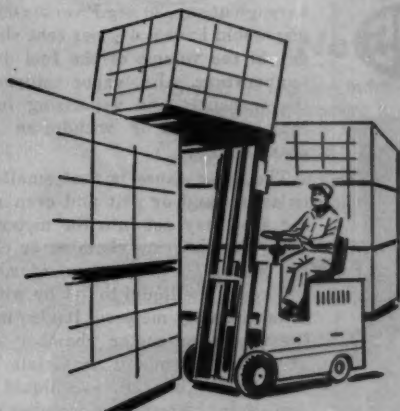
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ALL FISHER LPG EQUIPMENT IS BACKED BY MORE THAN THREE QUARTERS



LP-Gas Carburetion is your Fastest Growing Market...



INDUSTRIAL USES



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YOU CAN DEPEND ON...

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**FOR QUALITY
LP GAS EQUIPMENT
AND
FASTER SERVICE**

If your fuel volume is seasonal... if you're looking for a real load balancer... look to the carburetion field. It's a big market and it's growing fast year after year—up to 30% over last year.

But, be prepared! This is one market where quality control equipment is imperative. Engine fuel systems demand dependability. No system is better than its control equipment.

Consider this—From Fisher you get fast, dependable delivery service on the best in motor fuel fittings at attractive prices—all backed by three quarters of a century of engineering know-how. Use this service to capture the combustion engine market.

Fully descriptive bulletin No. LP-50

is yours for the asking

OF A CENTURY OF ENGINEERING KNOW-HOW...

FISHER GOVERNOR COMPANY

Marshalltown, Iowa / Woodstock, Ontario



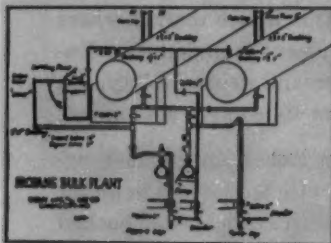
SINCE 1880

Your One Supplier with everything in L. P. gas and Anhydrous Ammonia Equipment



"The Loadmaster" LPG Truck Tank

PASLEY-DESIGNED Truck Tanks (see above and right) were first to feature all controls from one location. All operation is from one point—rear compartment.



BULK PLANTS Pasley LPG and Ammonia type installations—a turnkey job or engineering for your own installation. Write, wire or call.

Also a complete line of accessory equipment.

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COLOR—The Modern Trend! Bring your LPG Equipment up to date. Available in the following colors . . . (write for information)

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Sunshine Yellow	Seafoam Blue
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Eureka Orchid	Rose Beige
Lake Blue	Desert Rose



EVERYTHING IN LPG AND ANHYDROUS AMMONIA

The Pasley Mfg. & Dist. Co.

307 East 11th Street • Kansas City, Mo. • Tel. Victor 2-2369

(Continued from page 8)

How do you check the meter gallonage versus the total to arrive at a 10 per cent under registration? Do you base this on inventory and purchase figures or how is this established? On what basis do you buy your fuel? Do you buy the fuel on the basis of volume corrected to a certain temperature?

In this country it is normal to buy it corrected to a 60 deg. temperature basis. Whenever the liquid goes through the meter, it registers the gallons or volume on the basis of the temperature at which it is going through the meter. If it is going through at say, 30 deg. F versus 60 deg. you would have a 4½ per cent shrinkage in the volume of the fuel due to temperature. Also, vapor returned in the transport and vaporizing in the tank as liquid if withdrawn is a possible loss.

The other cause is that small particles of sand or grit and even welding shot may get into the meter and score the metering chamber or chamber walls. These scorings, of course, will cause the liquid to get by without being properly metered. It also makes the piston or meter chamber move hard. Also, gummy materials that may be in the L.P. gas liquid will deposit on the metering chamber walls and the rotor or meter piston. This will cause it to bind and require more differential pressure to make it rotate or move. In doing this, it increases the amount of slippage or liquid that can by-pass the metering chamber and not be metered. This will happen with either type of meter.

The metering chamber should be removed and carefully cleaned, removing all the sludge or gums that may have deposited on the rotor and in the chamber wall. If there is a rough spot caused by a piece of shot or sand on the wall, it may be cleaned off and smoothed up with some very fine emery cloth. This should be used carefully or it will cause inaccuracies.

I have discussed this with the metering expert at the Bureau of Weights & Measures here in California, and Los Angeles County in particular. He concurs with the above and advises that he thinks you will have the same problem with another type of meter.

We have had some installations of our own where we have had a great deal of trouble with the meter chamber and rotor or piston sticking. It was always caused by small gummy materials or welding shot or something like that. Instead of the usual

(Continued on page 16)



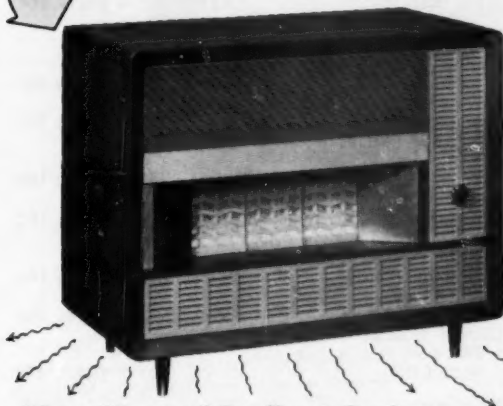
OUT FRONT styling for '59

THE
This is it!
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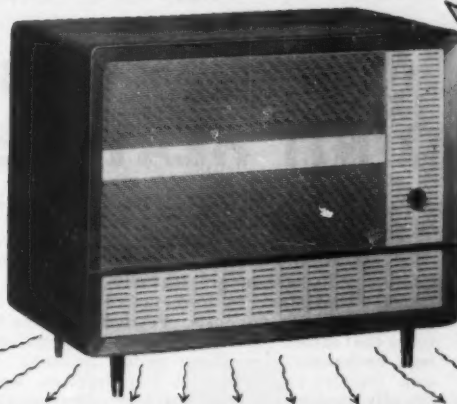
Styled by leading industrial designers, these magnificent new Temco gas heaters feature ultra-modern low silhouette . . . to sweep gracefully into the homes and the hearts of all America! Imperial color expression in new, high-temperature silicone paint finish for matchless beauty and durability. The ultimate application of modern convenience . . . as Temco "opens the door" to greater operating ease with a complete Control Center located out front!

WALL-TO-WALL CARPET OF WARM AIR!



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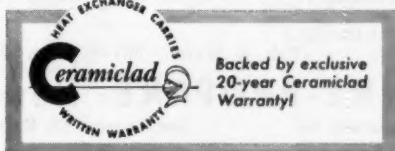
Three handsome models, superbly finished in two-tone decorator colors with gold anodized trim. Combine circulation and radiation for greater heating efficiency. Ceramic radiants produce cheerful glow through flame-proof Pyrex front. Extruded hearth plates and sides of gold anodized aluminum. New optional fan attachment assures wall-to-wall carpet of warm heating.



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Three to choose from . . . in this magnificently designed series that features the beauty and durability of Temco's high-temperature silicone paint finish. New, streamlined heat chamber produces more efficient operation, along with new, improved 200 CFM optional blower attachment which delivers warm air at floor level . . . assuring no hot blasts, no chilly drafts.

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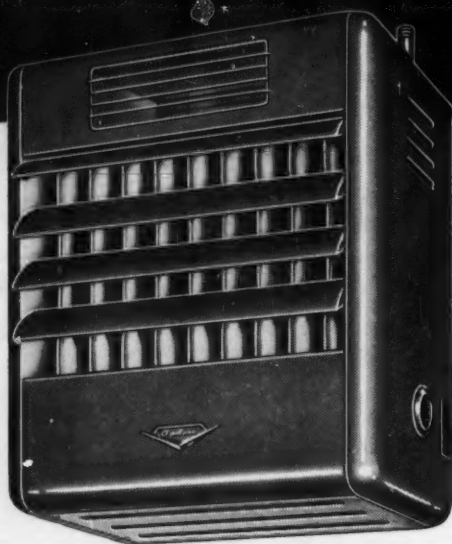
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BUTANE-PROPANE News

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FROM ANY VIEWPOINT

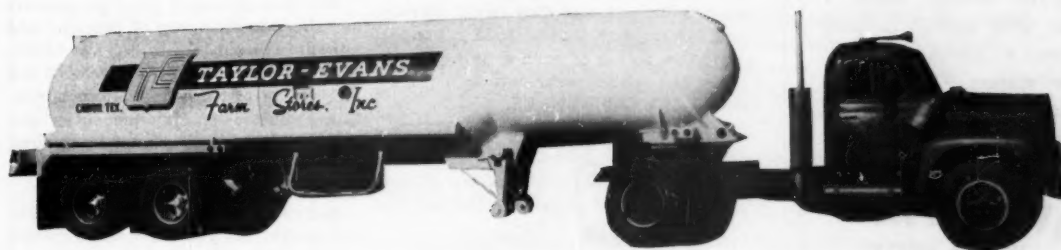
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Year after year, more and more LPG dealers have given LMC products the strongest possible recommendation . . . that of re-ordering additional units after carefully checking the performance of their first LMC tank.

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Many dealers who started with one single barrel LMC home delivery unit are now operating fleets of transport tanks, all engineered for economy by Lubbock Machine.

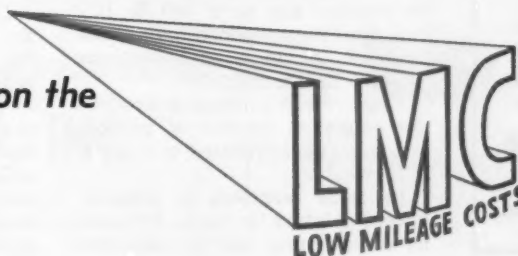
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SUBURBAN APPLIANCE CO.

General Offices
Whippany, N. J.

Factory
Dayton, Tenn.

(Continued from page 12)

"Y" strainer with fine screen, we installed a filter. In this case our trouble cleared up right away and it has functioned very well since.

It would be expected after a year of operation that all the sand, gravel, shot, etc., would be out of the L. P. gas system. We have not found this the case, however, and are continually checking the screens in our strainers and cleaning them. Also, changing the filter elements when that is necessary. Even after five or six years we find little bits of welding shot getting through if these strainers are not kept in good condition. For a period of time, pipe dope, especially if used excessively, will find its way into the meter; and it is a gummy substance causing trouble.—Ed.



Who makes home steam baths

Wisconsin

Do you know where I might be able to obtain information on making a home steam bath? I would use L. P. gas of course.

H. W.

We have been unable to find any authoritative information covering the construction of a home steam bath.

Small steam generators, gas fired, can be obtained from Eclipse Fuel Engineering Co., Rockford, Ill. It is possible that they have information on home steam baths and where they can be obtained. Or they might have some information that will aid in your own construction of such a unit.

Can any reader contribute information on this subject?—Ed.



Pamphlet No. 58 covers cylinder filling densities

Ohio

We are permitted to place 100 lb of propane gas in a 100 lb ICC cylinder. We are permitted to place as much as 115 lb of butane gas in a 100 lb ICC cylinder.

What rule or formula determines the maximum amount of propane or butane gas permitted in a 100 lb ICC cylinder?

In some instances a propane-butane mixture is used. Propane-butane mixtures may be composed

of various percentages of propane and butane. What formula may be used to determine the maximum amount of propane-butane mixture permitted in a 100 lb ICC cylinder?

P. A. J.

You will find the rule designating the amount of propane, butane or mixtures of propane and butane that can be placed in a container set forth in NBFU Pamphlet 58, Section B.12 entitled "Filling Densities." Propane falls in the range .503 to .510 and butane in the ranges .557 to .592.

The reason that a greater weight of butane can be placed in the same size container is simple. Butane is heavier per unit volume. A gallon of pure propane at 60 deg. F weighs 4.23 lb. A gallon of butane, 4.87 lb. A 100 lb ICC cylinder can hold a certain volume safely. The space occupied by 115 lb of butane will hold only 100 lb of propane.—Ed.



Don't use AA tanks for storing L.P. gas

Nebraska

We have in this community a 6000 gal. anhydrous ammonia tank that has no manholes.

Can this tank be used to store propane in and, if so, what effect would there be on heating equipment burning the propane that was so stored?

F. A. C.

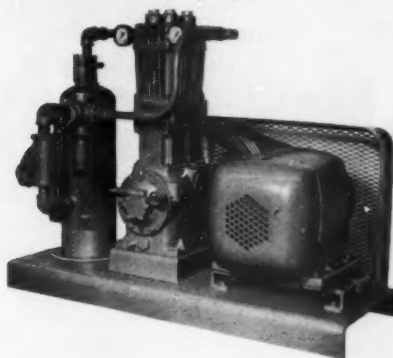
We have generally tried to discourage the interchanging of propane and anhydrous ammonia in storage tanks. It is difficult to completely remove the last traces of a product from a container unless special measures are taken. If the tank cannot be entered the risk is greater. And product mixing is not desirable.

Anhydrous ammonia attacks copper and brass. As you know these metals are used extensively in L.P. gas equipment. Small concentrations or even traces are often as corrosive, and sometimes more so, than concentrated solutions.

The anhydrous ammonia can attack the copper "pigtail," brass parts in the regulator, copper tubing, orifices in the burners or parts in the burner controls and cause leaks or damage to parts of the equipment. This may lead to dangerous malfunctions of safety controls. As the gas burns, corrosive gases or condensates may form to attack parts of the appliance or vent pipes.—Ed.

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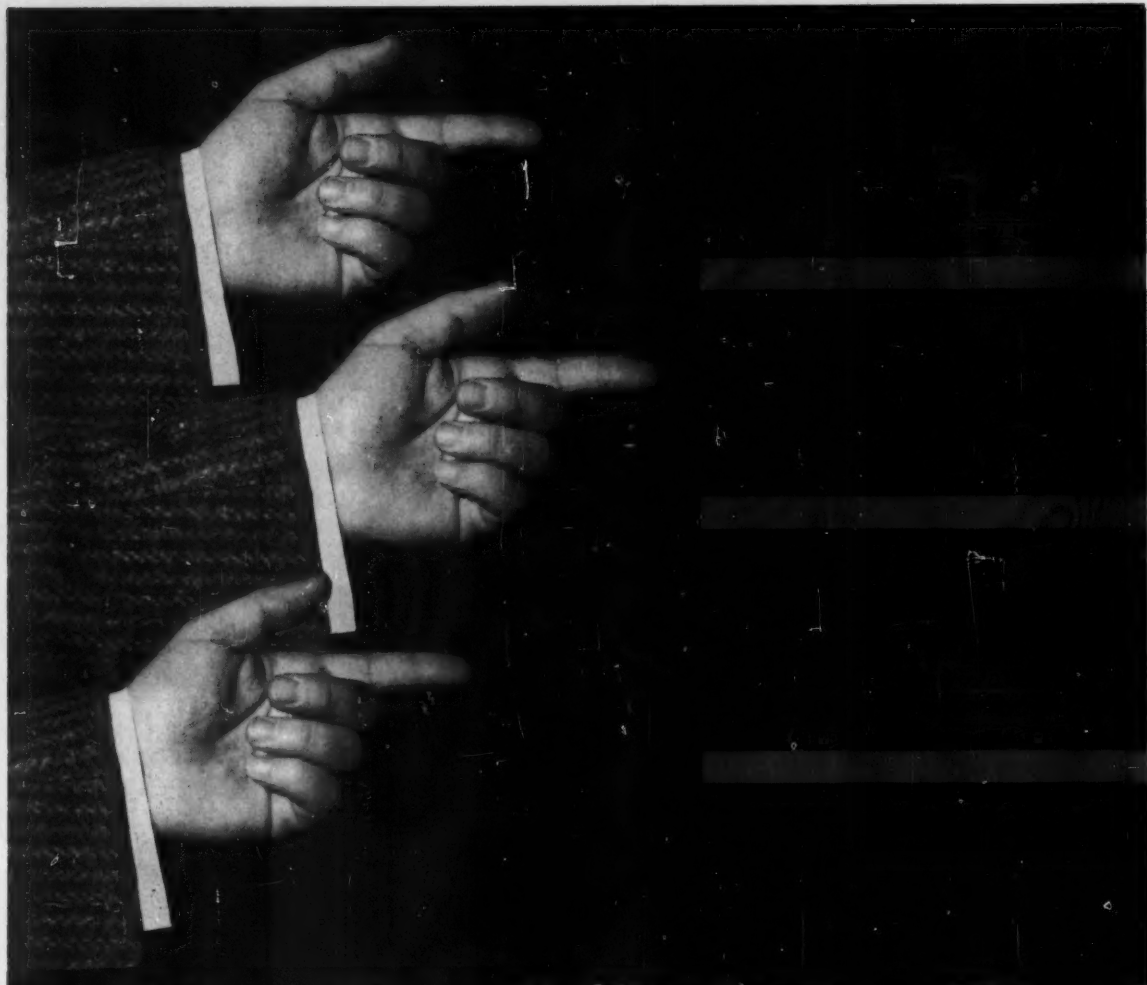
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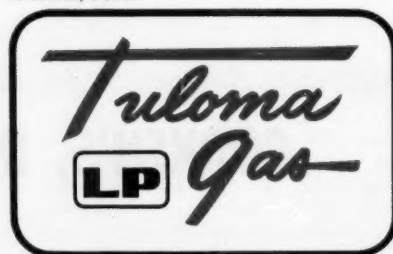
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BUTANE-PROPANE News

JANUARY 1959

beyond the mains



DO YOU TAKE YOUR NEW YEAR'S RESOLUTIONS SERIOUSLY? If you do, don't forget to include one to this effect: "I hereby resolve to render the finest service possible in 1959."

Service, you know, is really all you have to sell. Your customers can always go elsewhere for their gas, and they can probably buy just as good a gas at just as good a price from your competitor. They can buy appliances that will match yours feature for feature. But they can't buy identical service. So, in the long run, the measure of difference between a good dealer and a mediocre one is the quality of the service rendered. How do you stack up? Are you the good dealer or the mediocre one?

If you're a good one you establish a sound basic service policy. Within this framework, you establish good working practices. You hire the best men you can afford (and you can't afford NOT to hire good men). Then you give them the best training available.

Unfortunately, this is an area where many dealers have not been too strong. They have hired "bodies" and have sent them out into the field with a minimum of indoctrination. The men were not necessarily fitted for the work, nor were they experienced.

From time to time, industry leaders have attempted to correct the situation. One of the more productive efforts along this line was the series of classes which the United Gas Improvement Co., a gas utility, put on for LPG servicemen in Harrisburg, Pa. There have been other courses elsewhere, using a different approach.

But all of these "resident" programs have drawbacks. Getting the man and the course together at the right time and in the right place is not always possible. How many dealers with three or four-man service crews could spare even one man for any length of time?

Now for the first time, something is being done to provide the training so badly needed. The answer lies in home study courses, and suddenly the industry has broken out in a rash of them. There's the LPGA course. There's the industry training school set up by Earle Clifford in Maine. There's the Pyrofax program which Clifford authored, and which is described elsewhere in this issue. And there are undoubtedly others. Now, for the first time, the individual serviceman will be able to achieve the status of expert without leaving his own home.

Does this indicate a growing realization that the industry has begun to come into maturity? We think so. Growth will never again be as spectacular as it was a few years ago. Dealers have expanded fast and have had their growing pains, but today they stand on the threshold of maturity. With maturity comes responsibility.

Service is your No. 1 responsibility. If you would live up to it, give a thought to your servicemen. Remember, they are the face of the company; they're the ones who are in most frequent contact with the customer.

Resolve that, through careful hiring and thorough training--from one source or another--in 1959 you will present to your public the best face you can.

William Clark

*For the best of service . . .
all the time, you can
depend on Texas Natural,
the world's largest
independent producer of
butane and propane. Be
assured of a plentiful
supply with fast
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service

*Buy direct from a
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Texas Natural Gasoline Corporation

800 ENTERPRISE BUILDING

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A strong hand at the helm for 1959

THE year 1959 promises to be another big one for L. P. gas. But how big a year it will be for any particular L. P. gas company depends on how straight a course the man at the helm is able to steer. Unlike past boom years when a firm could reap huge profits by merely floating with the cur-

rent, good profits during 1959 will go to dealerships which have strong hands on the wheel.

Most economic barometers point upward—but not too fast. Home building is expanding. Consumers are beginning to buy again, with appliances high on their lists. Yet farm income, high in 1958, is ex-

pected to drop during 1959. And costs will continue to rise.

This "Management & Planning Issue" is designed to help the skipper chart a course for the year which will steer clear of high costs while using plenty of sales fuel. The result should be smooth sailing all the way. —M. A. B.

Beginning in this issue: An important new series

How to protect your capital and make it grow

BUTANE-PROPANE News takes pride in announcing — beginning in this issue — a series of five articles on a subject long demanded by L. P. gas dealers across the nation: how to protect your capital and make it grow. This series, based on actual operations, was written especially for BPN by LPG financial wizard J. Gordon Allard and has been reviewed by leading LPG dealers and financial experts. Subjects to be covered include adequate profits, safeguarding capital accumulation, future security and selling out, how to obtain public financing, and how public financing works. To begin this important series, just turn the page.

How to Protect Your Capital AND MAKE IT GROW

By J. GORDON ALLARD

Are you earning a 'satisfactory profit'?

SO you are wondering whether it would be better for you to sell to or merge your business with a "combination," finance your future expansion by selling stock or taking in partners, or continue as you now are. Most LPG operators are faced with this problem. But many have tried to sell, merge, or expand and have run smack up against a condition for which they could not provide a satisfactory answer. They just couldn't make a deal that would recover their present investment or guarantee their future security. The potential investors or financiers refused to believe that the business was worth the price at which it was valued by the owner. What was wrong? Why couldn't the parties agree on a satisfactory value? What is a going business really worth?

A potential purchaser, whether he is offering cash or the exchange of securities through a merger, must look at your business strictly on the basis of what it will earn for him. He must look at the earnings that will be left to reward investors and to finance growth after he has paid the taxes that will

apply under his operation. This may or may not be enough to recover the capital that you have invested in your business.

To an investor, assets can only be accepted at their cost value if the business will earn proper returns on that value. Tanks, buildings, vehicles and stock have no real value as such. They take on value in relation to the ability of management to produce profits through their use.

Earnings talk

This relationship of value to earnings governs the situation whether you are planning to sell part or all of your interest to some large consolidation, part of your interest through the sale of corporate shares, or part of your interest by taking in partners. Your local banker or any other money lender looks at the same relationship when you try to borrow money. He must be reasonably sure that the interest will be paid and the loan will be returned on schedule.

The most important factor in financing a business is good old fashioned profits. The investor and

the money lender want to see a sustained record of satisfactory earnings. Only the speculator will provide finances on expected future profits, and he will always collect his pound of flesh for taking the chance. The pound of flesh may be a substantial part of the investment that you have already put into the business.

Take the case of a large corporation with stock in the hands of the public. If the stock is going to perform satisfactorily and if the corporation is going to be able to obtain new equity financing (sell additional shares of stock) for growth, expansion, and continued operation, the corporation must be able to offer as good or better an opportunity for investment and dividends as other corporations in the same business. Furthermore, the profits for either a small business or a large corporation must be competitive with business earnings in general. Investors are not going to buy shares in the L. P. gas industry when there are better opportunities for security, dividends, and growth in other fields.

The most important function of profits in a competitive economy is to provide both the incentive and the funds for business growth whether it be a small business owned by one man or a huge corporate enterprise that has served the public for many decades. Profits are the food for growth, and unless a business grows it is eventually doomed to failure.

Proper accounting and analysis

The importance of proper accounting and analysis should also be emphasized. The income statement tells the dynamic story of how things are moving. The balance sheet, on the other hand, tells the

PART ONE

A description of adequate and satisfactory profits in the liquefied petroleum gas industry.

An analysis of how an L. P. gas dealer's total income should be divided between profits from gas sales and profits from other related activities.

An analysis of how the profits from other activities should be divided in order to be desirable and sound.

A discussion of a hypothetical operation showing (1) the investment in fixed assets, (2) the required total income, (3) the required income from gas sales, (4) the total expenses, (5) how to determine the average selling price of gas, (6) the desirable distribution of income from other sources.

Seven examples of actual operations demonstrating satisfactory and unsatisfactory results.

static story of how things stand on a given date. A financial report that carries the necessary information properly segregated makes it possible for us to analyze and compare a company's performance over a period of years. We are also able to make monthly and quarterly comparisons between years and can quickly learn:

Whether the company is on the way up or on the way down in earnings and sales;

The outlook for future earnings, based on trends;

Whether the various categories of expense are being held in line, or whether the company is getting off the beam in some direction;

Whether the profit margins are being held where they should be; and, whether the sources of income are being maintained in their proper relationship.

Also, through analysis, we can compare the performance of our company with other companies in the same line of business. What are the profits in other companies on a given amount of invested capital? How do our expenses compare with others? How does our yearly growth compare with others in the same general area or similar areas?

Specifically in the L. P. gas business, both the sales and cost of sales should be segregated between gas sales and income from other sources such as appliances, other equipment, tank leases and rentals, service income, etc. Also, attached to the operating statement should be the annual gallonage listed by months with a classification of the gallonage, i.e., bulk, cylinder, industrial, wholesale, automotive, own use, export, etc.

An income statement containing the correct information presents a detailed picture of "how things are moving" and makes possible intensive analysis and comparison so we can tell a good company from a sour one, an enterprising management from a sleepy one, an attractive investment from a risky one.

So far we have discussed the importance of adequate profits and of accurate accounting and analysis. These would generally apply to any and all businesses. Now let's take a look at the L. P. gas industry and examine some examples of good and not-so-good operations.

What is "satisfactory profit"?

First, how do we determine what is a satisfactory profit and what is not? As in all businesses (exclusive of monopolies), your competitors determine a great many things for you and profits are no exception. The best companies in any industry are obviously those that are able to consistently show the soundest earnings and these companies set the pace for everyone else in the same industry. The L. P. gas dealer, therefore, if he is going to be in the ball park, must be able to show earnings in relation to his invested capital which are about the same as the average earnings of the best operators in the industry.

In searching for a common denominator for the purpose of comparing earnings of various LPG



companies, the fixed asset investment *at cost* can be used, because this item is substantially the same at any given time for all companies. Older companies will have less invested but they are faced with increasing costs as they expand and replace equipment, and no two companies are exactly alike. The amount invested in fixed assets to handle a given amount of gallonage will vary considerably between companies, *as will almost every other factor*, depending upon the type of operation. Is it predominantly bulk distribution or cylinder? Does the company have a great number of large consumers, industrial or otherwise? Do a majority of the customers own their tanks and cylinders, or does the company own them? Is the company serving principally domestic accounts? Or does it concentrate on industrial business, or perhaps, farm business? What is the geographical location of the company? The answers to all these questions must be taken into consideration when analyzing a company. However, regardless of the answers, all

companies are faced with the same problem of showing a satisfactory return on their investment.

How much profit is satisfactory?

Just what, then, would be considered a satisfactory profit in this industry? A study and analysis of many retail LPG operations over the past 10 years shows that the most efficient and generally the soundest businesses will consistently produce as a net profit *before* income taxes an amount equal to at least 20 per cent or more of their fixed asset investment *at cost*. This figure is after *all expenses*. The net before taxes is used because there is a wide variance between companies with respect to their tax structure, but their performance can be accurately compared on a "before tax" basis.

It should be mentioned here that there are two expense items—interest and depreciation—which have a decided effect upon the net earnings and they may differ considerably between companies. Interest may be proportionately in relation to the size of the company far greater in one operation than another, but this does not necessarily affect the earning power of the company. Depreciation may differ widely as some operators use a very high or "fast" schedule while others use a much lower or "slower" rate. Those companies using a fast schedule will have a comparatively high depreciation figure, and since it is an item in the expense column, they may not be able to show earnings before taxes in excess of 20 per cent on their fixed asset investment. For this reason it is necessary to take a close look at the "cash flow" in a company.

The term "cash flow," as it is commonly used, refers to the net profit *after taxes* plus the depreciation. Since we are looking at companies on a *before tax* basis, we will use the term "cash flow before taxes," which would be the net profit before taxes plus the depreciation. It is quite possible, with two companies of about the same size and annual gallonage, that one using a very slow rate of depreciation would show a much higher net profit before taxes than the other using a much faster schedule. But their cash flow might be nearly

identical. In other words, one may have a very low depreciation figure which thus has the effect of increasing the net income before taxes while the other may have a very high depreciation figure which would correspondingly reduce the net. As a practical matter, therefore, the earning power of the two companies would be considered the same since they both have about the same amount of cash in the business before taxes.

Why 20 per cent?

Why the 20 per cent figure? It should be emphasized that this amount is to be regarded as *minimum* in order to produce satisfactory earnings except with interest or depreciation situations as noted above. The very efficient companies will show an amount varying between 25 per cent and 33 per cent and occasionally more. The United States government is now the silent partner of every American business, in many cases taking more than 50 per cent of the taxable income. In this situation, over half of the 20 per cent earnings must be paid to the government. This leaves the company with slightly less than 10 per cent as a net profit on its investment with which to pay dividends and have something left to be retained in the business for expansion and other purposes. With common stock dividends usually—under normal conditions—paying at least between 4 and 6 per cent, there certainly isn't very much left for the business. Even many high grade corporate bonds now are returning in excess of 4 per cent.

It is, of course, realized that many businesses are not in this high tax bracket for a variety of reasons. However, if you are an individual owner and the time arrives when you desire to sell, merge, or otherwise secure your capital accumulation, your net profit more than any single factor is going to determine what you will receive for your business, except under very abnormal or unusual circumstances.

As mentioned earlier, regardless of what your particular tax situation happens to be, the potential buyer will in all probability be faced with at least a 50 per cent tax rate and the net return on his



J. Gordon Allard, author of this five-part series, holds a B.A. degree in business administration and finance from Pomona (Calif.) College.

He established and supervised Signal Oil & Gas Co.'s LPG dealer organization and worked with company dealers on management and financial problems. He investigated and analyzed the financial status of numerous LPG dealers throughout the Western and Mountain states and the Southwest.

Mr. Allard was a financial consultant for Calor Gas Service Inc., San Francisco, and is currently an independant business consultant.

investment in your business is going to be calculated on that tax basis. The same thing applies in the case of a merger.

Income of typical operation

Now let's take a look at what might be regarded a typical *retail* LPG operation and examine its sources of income and what the percentage-wise relationship of these sources should be.

Observation of many sound and profitable companies shows that at least 50 per cent or more of the total net income is derived from profits on gas sales, except under temporary or very unusual circumstances.

Using a hypothetical example for illustration, suppose we have a retail business, the distribution of

which is predominantly domestic bulk, selling one million gallons annually, with a fixed asset investment at cost of \$150,000. This is equivalent to 15 cents per gal., which is about the amount of investment required, on the average, for this type of operation, although many companies will have less, and others more, depending upon varying circumstances. If we are going to have a net profit before taxes of at least 20 per cent on this investment, we are required to earn not less than \$30,000 which is 3 cents per gal. If at least 50 per cent of this income is to be derived from the sale of gas, we need a profit of \$15,000 or 1½ cents per gal. on gas sales.

Now that we know what our profit on gas must be, the next thing to determine is how much total revenue we need from the sale of gas in order to produce that profit. The first factor to consider is the total expenses for a 12-month period. In this example we will assume that these amount to \$80,000, equivalent to 8 cents per gal. This amount should be considered *maximum* for this type of operation. Efficient operators will usually have a lower figure.

Practically all of the expenses in an average LPG company are related to the selling and distribution of gas, therefore *all* expenses should be charged against the gas sales. Usually the expense involved in producing income from other sources is negligible. If the gas income is not sufficient to cover all of the expenses plus an adequate profit, the company is usually headed for trouble.

Three items determine price

Going back to our example, we know that we must cover expenses amounting to 8 cents per gal. (\$80,000) and profit of 1½ cents per gal. (\$15,000). This simply means that our average gross profit, or margin on gas sales, must equal the sum of the above two items, or 9½ cents per gal. (\$95,000). In order to determine how much total revenue we need from the sale of gas we simply add 9½ cents to the cost of the gas *delivered* at our bulk plant, and that figure is what our over-all average selling price must be.

EIGHT TYPICAL INCOME STATEMENTS (COMPANIES A TO G ARE ACTUAL OPERATIONS)

	Hypothetical Company	Company A	Company B	Company C	Company D	Company E	Company F	Company G
Annual gallons	1,000,000	1,094,279	899,566	5,697,270	5,393,780	8,343,498	740,189	24,333,741
Fixed assets at cost.....	\$150,000	\$158,178	\$158,253	\$872,769	\$852,547	\$1,151,767	\$96,563	\$3,970,553
Gross profit on gas sales.....	9,504	105,722	78,464	579,069	501,322	816,952	64,052	2,295,093
Total expenses.....	80,000	73,416	73,576	445,378	501,621	626,552	52,678	1,769,648
Net profit on gas sales.....	15,000	32,306	4,888	133,691	(299)	190,400	11,374	525,445
Other net income.....	15,000	19,604	26,740	107,198	114,318	123,413	10,690	200,448
Total net profit before taxes.....	30,000	51,910	31,628	240,889	114,019	313,813	22,064	725,893
Percent return on fixed assets.....	20.00%	32.82%	20.00%	27.60%	13.37%	27.25%	22.85%	18.28%
Percentage division of total profit:								
Gas profit.....	50.00%	62.24%	15.38%	55.34%	0	60.64%	51.52%	72.48%
Other profit.....	50.00%	37.76%	84.62%	44.66%	100.00%	39.36%	48.48%	27.52%
Percentage division of other profit:								
1—Tank leases.....	65.00%	74.81%	38.62%	57.42%	39.86%	59.31%	55.96%	29.63%
2—Appliances.....	23.00%	18.80%	49.85%	29.61%	47.65%	20.61%	31.07%	57.35%
3—Service.....	10.00%	5.25%	8.76%	11.06%	11.37%	9.15%	6.39%	10.86%
4—Miscellaneous.....	2.00%	1.14%	2.77%	1.91%	1.12%	10.93%	6.58%	2.16%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

COMMENTS: Hypothetical Company. Gross profit minimum; expenses maximum; all other items minimum; division of total profit and other profit both satisfactory. **Company A.** Gross profit about average and satisfactory; expenses highly efficient; all other items above average and highly satisfactory; division of total profit and other profit both very desirable. **Company B.** Gross profit too low; expenses too high; division of total profit extremely unsatisfactory; gas profit far too low and other income is abnormally high and probably temporary; division of other profit very unsatisfactory; net profit and per cent return barely satisfactory. However, to be in a sound position, gas profit should be at least 1.76 cents as current other profit is a temporary "windfall" and will eventually decrease by about 50 per cent, possibly more. **Company C.** Gross profit slightly above average; expenses barely efficient; all other items above average and very satisfactory; division

of total profit and other profit both satisfactory; other profit will probably decline somewhat but the company would still show a satisfactory net profit and percentage return. **Company D.** Gross profit slightly low; expenses at least 1.30 cents too high; profit on gas sales at zero is ridiculous with nearly \$1 million invested for the purpose of selling and distributing gas; gas profit should be at least 1.58 cents, and if expenses were reduced by this amount this operation would show a satisfactory net profit and percentage return; as they are, these items are unsatisfactory; division of total profit extremely unsatisfactory; other profit is abnormally high, will probably decline, and its division is highly undesirable. **Company E.** Gross profit average; expenses efficient; all other items about average and very satisfactory; division of total profit and other profit both very desirable; low investment partially responsible for high per cent return. **Company F.** Gross profit

too low, caused in this case by intense competition; expenses very efficient; all other items satisfactory; division of total profit and other profit both satisfactory; this company is an example of one with an "unfortunate" gallonage and demonstrates the absolute necessity for very efficient management. When a company of this type passes the 500,000 to 600,000 gal. point, additional fixed overhead expenses are required and the company could possibly handle up to one million gal. with no increase in fixed expenses. **Company G.** Gross profit highly satisfactory and would indicate that the company uses meters extensively thus eliminating to a large extent the income from tank leases. In view of this fact with the other profit abnormally low, its division should be considered satisfactory. Total net profit just 3 mills too low to be satisfactory and show a return of 20 per cent.

In this example, suppose the delivered cost of gas is $6\frac{1}{2}$ cents per gal. (\$65,000). Then $9\frac{1}{2}$ cents plus $6\frac{1}{2}$ cents equals 16 cents per gal. or \$160,000. This figure is our required total revenue from gas sales and 16 cents per gal. must be our average selling price as long as the above costs and expenses remain as they are.

Incidentally, operators should check their average gross margin, or profit, on gas sales each and every month as this is the one figure which should not fluctuate. If your margin is not sufficient, then you should attempt to increase it by raising prices if this action is possible. If this cannot be done and you are stuck with too low a margin, then your only alternative is to reduce expenses sufficiently to give you the proper income from gas sales and a total net profit equal to 20 per cent.

Other income

The additional $1\frac{1}{2}$ cents per gal., or \$15,000 profit, which we require in this example will be derived from other sources which are usually divided into four principal categories, namely:

1—Income from tank leases and rentals of equipment.

2—Profit on appliance and equipment sales.

3—Service income.

4—Miscellaneous, which would include such items as:

a. Discounts earned.

b. Interest and dividends received.

c. Bad debts recovered.

d. Profit on the sale of capital assets.

An average percentagewise division of this other income, which sound and profitable companies usually have, will be approximately as follows, the dollar figures applying to our hypothetical example:

1—Income from tank leases and rentals of equipment	%	
	65	\$9750
2—Profit on appliance and equipment sales	23	3450
3—Service income	10	1500
4—Miscellaneous	2	300
	100	\$15,000

Items 1 and 2 are obviously the most important, making up 88 per cent of the total other income. There is an exception, however, and that applies to companies using meters rather than leasing customer tanks. In this instance the amount which shows up as other income derived from tank leases in other companies is reflected in the selling price of the gas through the minimum monthly meter charges.

To illustrate, suppose our hypothetical company used meters exclusively and had no lease or rental income at all. Theoretically, the amount shown above as income from tank leases would appear in the average selling price of the gas which would thus increase the price, and the gross margin as well, by the same amount or \$9750. Our profit from gas sales, then, would amount to \$24,750 equal to 2.475 cents per gal. instead of \$15,000 or $1\frac{1}{2}$ cents per gal. The other income would be reduced by the same amount so that it would be relatively small at \$5250 equivalent to 0.525 cents per gal. But the two combined make up the total income of \$30,000, equal to the 3 cents per gal. which we require.

Percentagewise, instead of being divided 50-50, income from gas sales now represents $82\frac{1}{2}$ per cent of the total income while the income from other sources accounts for only $17\frac{1}{2}$ per cent. Successful companies using meters extensively will usually show about this percentage division of income.

Profit from appliances

There is one more factor which should be mentioned and that is the opportunity for profit from the sale of appliances and equipment. This is an important item and from all present indications, the years ahead present the LPG dealer with even more opportunity in this regard.

Manufacturers are projecting strong demand for major items such as ranges, refrigerators, washers, dryers, water heaters, space heaters, air conditioners, furnaces and incinerators. One top manufacturer predicts that the appliance industry will double in size by 1967 through the industry's efforts to hold down prices with mass production. Also, it should be noted that there has been a 10 per cent rise in home building even in a so-called recession year.

Because of the typical variations between L. P. gas operations, it is obviously very difficult to generalize and set forth definite percentage relationships which would universally apply to every company. The principles which have been discussed here are very fundamental and more or less describe the boundary lines within which a sound and profitable LPG business should operate. Each company will have certain peculiarities, situations, and problems all its own and each business must be analyzed individually in order to determine its degree of efficiency, its actual and potential earning power, and just how satisfactory or unsatisfactory its performance is.

Included with this article is a page of figures taken from the income statements of actual operations. Although each one is different in almost every respect, you will note that the most successful companies operate within the boundary lines described above. The unsatisfactory operations are outside those boundaries in one respect or another. All of these operations are retail companies with predominantly domestic bulk distribution. For comparative purposes, the first example shows the figures used in the discussion of the hypothetical company. The annual gallonage is given in each instance in order to establish the size of the operation. ■

Coming next month in part two of this series . . .

A discussion of how owners of L. P. gas businesses should safeguard their capital accumulation.

Five principal considerations with which owners of successful dealerships are concerned.

A discussion of five specific problems confronting the owners of successful businesses showing (1) how these problems affect the security of their capital accumulation and jeopardize its being kept intact and (2) how these problems can be minimized and alleviated.

LPG sales up 9.4% in 1958

SALES of L.P. gas in 1958 appear to have increased 652.3 million gal. or 9.4 per cent over 1957, raising total sales to 7591.4 million gal. This is 30 per cent above the average annual L.P. gas sales increase of 500 million gal. (for the years 1950 through 1958). The trend as shown in the chart in *Fig. 1* should continue, principally due to the tremendous domestic, motor fuel, and chemical potential still existing.

Domestic and commercial

Sales were up 467.23 million gal. or 15.2 per cent over 1957 to 3534.3 million gal. *Table 1* shows that this equals 46.5 per cent of total sales which compares with 44.2 per cent of total sales in 1957 and 45.2 per cent in 1956. The domestic market continued to account for nearly one-half of all L.P. gas sales.

Motor fuel

Sales were up 16.2 million gal. or 2 per cent over 1957 to 821.2 million gal. *Table 1* shows that this equals 10.8 per cent of total sales, indicating that the growth in the motor fuel market has kept pace with the growth of the industry.

Industrial and miscellaneous

Sales were up 63.1 million gal. or 9.2 per cent over 1957 to 748.4 million gal. This equals 9.9 per cent of total sales. The trend of industrial and miscellaneous sales is slightly upward.

Gas manufacturing

Sales were up 23.3 million gal. or 10.1 per cent over 1957 to 254.5 million gal. This amounts to 3.4 per cent of total sales which is approximately the percentage of total sales shown for the past five years.

Chemical manufacturing

The sale of L.P. gas as a raw



1958 LP-GAS SALES UP 9.4% TO 7,591,400,000 GALLONS

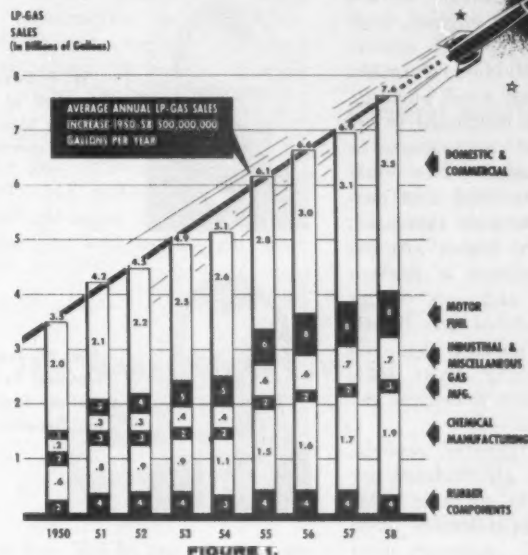


FIGURE 1.

By GEORGE R. BENZ, W. F. DeVOE, and PAUL W. TUCKER
Phillips Petroleum Co., Bartlesville, Okla.

material for the manufacture of chemicals was up 136.9 million gal. or 7.9 per cent over 1957 to 1869.2 million gal. This amounts to 24.6 per cent of total sales as compared with 25 per cent in 1957 and 17.9 per cent in 1950. *Fig. 1* shows that chemical manufacturing has increased an average of 135 million gal. a year since 1950.

Rubber components

The volume of L.P. gas consumed in the manufacture of synthetic rubber is down 54.4 million gal. or 13 per cent from the amount used in 1957 to 363.8 million gal. This use amounts to 4.3 per cent of the total L.P. gas sales as compared to 6 per cent in 1957 and 8.9 per cent in 1951.

Domestic and commercial

In February and March, 1958, an unusual, prolonged cold spell in

the South and southeastern part of the United States resulted in an abnormally high demand for L.P. gas, principally for house heating. It is estimated that approximately 230 million gal. of the 467.23 million gal. increase in the domestic and commercial market over 1957 occurred primarily because of this cold spell. This illustrates the tremendous effect weather has on the L.P. gas business. It is estimated that the domestic and commercial market for L.P. gas in 1958 totaled 3534.3 million gal., up 15.2 per cent or 467.23 million gal. over the 3067.07 million gal. sold in 1957.

The most important factor in domestic growth continued to be house heating. Central gas heat is becoming more and more popular, and new customers continued to convert to L.P. gas for house heating from other fuels.

In most areas of the country, the conversion of 100 lb cylinder customers to bulk distribution continued. When domestic customers expand their use of L.P. gas beyond the cooking and water heating load they "graduate" into the bulk type of distribution.

The use of L.P. gas in agriculture continued to expand, increasing the summer L.P. gas load. Some of the agricultural uses are for irrigation pump engines, crop and grain drying by both custom dryers and individual farmers, farm tractors, and weed burning.

Normal growth continued to account for part of the increase in the domestic market. New bulk plants were constructed and customer installations were increased.

More and more homes are enjoying the convenience of modern gas appliances and are being dressed-up by outside gas lights.

In the house heating field the trend of converting from individual space heaters to central gas heating continued.

According to industry reports, residential gas air conditioner sales exceeded 7000 units in 1958, compared to approximately 2500 units sold in 1957. Although most of the air conditioners sold use natural gas, the sales figures indicate the growing demand for L.P. gas units. Several types of gas air conditioners are available on the market and others are in advanced stages of development.

Motor fuel

L.P. gas for motor fuel use continued to represent more than 10 per cent of the total L.P. gas market. It is estimated that L.P. gas used for motor fuel increased 16.2 million gal. or 2 per cent over the amount used in 1957, despite reductions in two of the principal motor fuel uses. Motor fuel used for irrigation pump engines fell far behind previous years due to heavy rainfall in the principal irrigation areas. Reduced oil well drilling resulted in less L.P. gas used for this purpose. Other motor fuel applications offset the above reductions and resulted in an overall gain for the year. The estimated 821.2 million gal. used for motor fuel in 1958 compares to 805.06 million gal. in 1957.

Substantial gains continue to be



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made in the use of L.P. gas in industrial tractors and lift trucks, cargo truck refrigeration units, ready-mix concrete trucks, farm tractors, taxicabs, and small fleet trucks.

Materials handling equipment continues as the fastest growing individual market for L.P. gas motor fuel. A majority of the industrial tractor and lift trucks on L.P. gas are now factory-equipped for LPG, and conversion of gasoline units to L.P. gas continues. An increasing number of the airlines are converting their industrial tractors to use L.P. gas for motor fuel.

L.P. gas is the dominant and unexcelled fuel for cargo refrigeration units in the trucking industry. Railroads are using L.P. gas both to drive mechanical refrigeration units on refrigerator cars and to provide power to operate electrically-driven circulating fans in the ice refrigerated cars.

The use of L.P. gas in farm tractors represents the largest volume motor fuel use. It is estimated that the L.P. gas motor fuel sales for farm tractor use in-

creased 5 per cent over 1957. Over 12,000 of the tractors produced in 1958 were factory-equipped for L.P. gas, and the conversion of gasoline tractors to L.P. gas continues at a vigorous pace.

Early in 1958, the LPGA published a directory listing over 4000 service stations and bulk plants selling L.P. gas for motor fuel. More stations, however, in good locations, are needed to continue the expansion of the L.P. gas motor fuel market, particularly in the East, Southeast, and Northwest.

L. P. gas appliances

During the greater part of 1958 the sales of L.P. gas appliances fell behind the same period in 1957. This situation was a continuation of the decline in all durable goods sales which developed in 1957, but last quarter 1958 indications were that the tide had turned. Sales improvements were in evidence and there was good reason to believe that the bottom of the appliance sales curve was passed. New family formations, home building, and an increase in replacement buying appear to be the strengthening factors as industry goes into the year of 1959.

Domestic L.P. gas range sales for 1958 were about 355,400 or 20 per cent of all domestic gas range sales. Built-in gas ranges continued to be popular and sales were well ahead of 1957 with an increase of over 10 per cent. Total shipments of all gas built-in units in 1957 were 197,200.

Automatic L.P. gas water heater sales for 1958 are estimated to be 283,300 which almost equals the 292,707 shipped in 1957. In 1958, L.P. gas water heater sales represented approximately 11 per cent of all automatic gas water heater sales.

L.P. gas vented recessed wall heaters reached 55,500 units or nearly 15 per cent of all vented recessed wall heaters. L.P. gas floor furnace sales were 20,700 units, or 25.8 per cent of the 80,200 gas floor furnace sales.

Sales of direct heating equipment for use with L.P. gas reached 382,800 or 27.4 per cent of total direct gas heating equipment sales (1,397,000 units).

Warm air furnace sales were 795,400 units with 73,200 L.P. gas units (a little under 10 per cent of the total). Conversion burners reached a total of 156,000 units with 4700 units for use with L.P. gas (3 per cent of total).

Industrial and miscellaneous

Industrial and miscellaneous uses consumed an estimated 748.4 million gal. of L.P. gas in 1958. This is a 63.1 million gal. or 9.2 per cent increase over 1957. This appears particularly impressive in view of the generally reduced industrial activity. However, the unusually cold weather resulted in heavy use of L.P. gas standby facilities. Use of L.P. gas in the secondary recovery of crude oil

(included here this year) is estimated to have increased over 20 per cent this year. This is a promising use but difficult to predict at this time. Interesting, of course, is the fact that much of the volume "used" in secondary recovery operations will, no doubt, be "produced" again. The highway construction program continues to make asphalt aggregate drying plants a very attractive load builder for many dealers.

Gas manufacturing

The gas utilities used an estimated 254.5 million gal. of L.P. gas which is an increase of 10.1 per cent or 23.3 million gal. over

that used in 1957. This increase was primarily due to the unseasonably cold weather during the first quarter of the year—particularly in the Southeast. The gas utility companies continue to be interested in large-volume L.P. gas storage facilities, both above-ground and underground, with one large volume refrigerated storage facility being added during the year.

Chemical manufacture

Despite the business recession, the sale of L.P. gas as a raw material for the manufacture of chemicals and chemical intermediates gained 7.9 per cent or 136.9 mil-

HOW THE 1958 MARKET WAS DIVIDED



DOMESTIC AND COMMERCIAL

Total Sales: 3534.3 million gal.
15.2 per cent increase

The February-March cold spell in the South and Southeast resulted in an abnormally high demand for LPG househeating. And househeating continued to be the most important factor in domestic growth. Use of LPG for agriculture continued its expansion.



ENGINE FUEL

Total Sales: 821.2 million gal.
2 per cent increase

LPG used for carburetion continued to represent more than 10 per cent of the total LPG market. Heavy rainfall cut use of LPG for irrigation in 1958, while reduced oil well drilling resulted in less LPG used for that purpose. Gains in other uses offset losses.



INDUSTRIAL AND MISCELLANEOUS

Total Sales: 748.4 million gal.
9.2 per cent increase

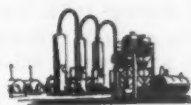
Increased use of LPG in this category is particularly impressive in light of reduced industrial activity during 1958. Some of this gain, however, is due to heavy use of LPG standby in the unusually cold 1958 winter. Asphalt plants made good load builders.



GAS MANUFACTURING

Total Sales: 254.5 million gal.
10.1 per cent increase

This gain is attributed to the unusually cold weather during the first quarter of the year. Utilities continue to be interested in large volume LPG storage.



CHEMICAL MANUFACTURING

Total Sales: 1869.2 million gal.
7.9 per cent increase

This is a higher percentage gain than that experienced by the chemical industry as a whole. Feedstock for polyethylene continued as the most rapidly growing chemical market.



SYNTHETIC RUBBER

Total Sales: 363.8 million gal.
13 per cent decrease

A decrease in new car production plus a decrease in synthetic rubber and butadiene inventories were responsible for the drop in LPG sales to the rubber industry.

TABLE 1. PRINCIPAL USES OF LPG SHOWN AS % OF TOTAL SALES

Principal Uses	1950	1951	1952	1953	1954	1955	1956	1957	1958
Domestic	58.1	51.2	50.6	50.3	51.2	45.8	45.2	44.2	46.5
Motor fuel	3.7	6.9	8.3	10.1	10.7	10.6	11.7	11.6	10.8
Industrial and misc.	6.5	6.4	7.6	7.6	7.8	9.1	9.9	9.9	9.9
Gas mfg.	7.2	6.6	5.8	4.5	3.8	3.5	3.2	3.3	3.4
Chemical mfg.	17.9	20.0	19.4	19.6	20.5	24.4	23.7	25.0	24.6
Rubber components	6.6	8.9	8.3	7.9	6.0	6.6	6.3	6.0	4.8
TOTAL									100 Per Cent

lion gal. to a total of 1869.2 million gal. This is a much greater percentage gain than that enjoyed by the chemical industry as a whole, whose gain in volume produced has been estimated at 2 per cent over that of 1957.

Feedstock for polyethylene manufacture continues to be the most rapidly growing chemical market for L.P. gas, although production capacity has temporarily outstripped demand. While ethylene oxide and ethyl alcohol continue to rank first and second in ethylene requirements, polyethylene is almost on a par with ethyl alcohol and is gaining rapidly on ethylene oxide. One of the features of the past year has been the increase in ethylene production from butane and propane as compared to production from ethane or recovery from refinery gases.

An interesting and entirely unexpected development in the demand for polyethylene the past year arose from the "hula hoop" fad. It has been estimated that through October, over 16 million of these hoops were made of polyethylene. While this demand was not a major factor in the increased market for polyethylene, it illustrates the point that availability and adaptability of this polymer encourages new uses of an unpredicted nature.

The consumption of propylene for chemical and chemical intermediates also continued to increase. Almost 60 per cent of this was used in the manufacture of isopropyl alcohol. Other petrochemicals and intermediates consuming propylene, such as propylene trimer, tetramer, and higher polymers were in increased demand. Propylene oxide and its derivatives have found a promising market in the manufacture of urethane foams used as cushioning materials.

Butadiene, produced from re-

finery butylenes or normal butane, suffered a major loss in its primary markets, synthetic rubber and latex. As a result, more effort was directed to its use as a chemical intermediate in the manufacture of nylon, isosebacic acid, rubber base paints and fungicides.

Rubber components

The use of L.P. gas in the manufacture of synthetic rubber components decreased an estimated 13 per cent during the year 1958 to a total of 363.8 million gal. This gallonage decrease of 54.4 million gal. can be attributed to the fact that new car production was greatly reduced in 1958 plus the fact that inventories both of synthetic rubber and butadiene were reduced during the year. Actually, it is estimated that the production of synthetic rubber was down over 16 per cent. The reason that L.P. gas usage for synthetic rubber components held up better than the production of synthetic rubber is that butadiene capacity in operation in 1958 included a higher percentage of capacity requiring normal butane feedstock than in previous years.

Supply

Overall production of L.P. gas at natural gasoline plants and refineries increased approximately 2 per cent during 1958. Twenty-six new plants came on stream during the year and several existing facilities were expanded. It is estimated that thirteen new plants will be added in 1959.

Canadian L.P. gas production capacity is expanding rapidly, but the effect of this capacity on the U.S. market is as yet an unknown factor.

Underground storage capacity for L.P. gas continues to grow. The available underground storage capacity now totals over 1.6 billion gal. which is an increase of

almost 20 per cent over 1957 with an additional 100 million gal. currently under construction. Additional underground storage is in the planning stage.

Transportation

Improvements of L.P. gas transportation facilities were highlighted during the year by conversion of the Little Big Inch pipeline from natural gas to refined petroleum products (including L.P. gas) service with a capacity of 185,000 bbl per day.

Pipeline movement of L.P. gas was further increased by the addition of lines carrying natural gas liquids as well as comparatively short pipelines to carry chemical plant feedstocks, particularly in the Gulf Coast area.

The rail transportation picture was improved somewhat by the fact that railroads rejected an authorized rate increase in ten southeastern states. In addition there will be substantial general rail freight reductions in effect early in 1959. Although more L.P. gas was shipped by rail in 1958 than 1957, the active L.P. gas tank car fleet was reduced by the end of the year.

Water transportation of L.P. gas continues to receive considerable attention. Three new inland waterway barges were placed in service during the year and one new ocean-going tanker is under construction and scheduled for delivery early in 1959.

Movement of L.P. gas by transport trucks continued to grow at a rapid rate with transports having a water capacity of 10,000 gal. becoming more and more common with the more widespread use of high strength steels and the emphasis that is being placed on reduction in dead weight of these units.

Safety developments

Pamphlet 58, the L.P. gas industry bible, published by both the National Fire Protection Association and National Board of Fire Underwriters, was again revised to keep pace with new developments in equipment and safe operating techniques in the industry. Even more significant was the substantial revision of NFPA Pamphlet No. 59, covering L.P. gases

at utility gas plants, to recognize and properly provide for use of containers having a water capacity of up to 200,000 gallons in such facilities. While this is a step forward, further increases are necessary to allow economical and practical size containers.

Advertising and sales promotion

The National LP-Gas Council completed its eighth year of operation as the recognized advertising and public relations agency of the industry. Significant increases in membership of all segments of the industry—producers, marketers, and appliance and equipment manufacturers—enabled the Council to record growth in both number of participants and dollar volume of contributions, and made it possible for this organization to increase its advertising and public relations service for the industry as a whole.

The Dealer Sales Aid section of the Council produced and distributed items of interest and assistance to the marketers, making it possible for them to tie into the national advertising and sales pro-

motion activities at the local level. Ambitious plans for 1959 have been formulated to increase public acceptance and interest in L.P. gas.

The L.P. gas industry's outstanding performance record during the severe cold spell experienced in the early part of the year earned it both recognition and respect. Not only was the consuming public, for the most part, supplied with all of its L.P. gas requirements, but many industrial and gas utilities kept their operations going only because of the existence of standby and peak shaving L.P. gas installations.

Outlook

Even though business activity in general was at a reduced level throughout the major part of the year, L.P. gas sales increased 30 per cent more than the average increase of recent years. With the economy showing definite recovery trends, there is every indication that 1959 will be another good year.

The trend to suburban living will probably continue and new home construction appears very bright. The aggressive L.P. gas distributor has an excellent opportunity to build his load because of the increasing demand for heating and air conditioning.

There are numerous unexploited summer load builders wherever L.P. gas is used. A few of these are crop drying, flame weeding, tractor fuel, summer air conditioning, asphalt heating, and aggregate drying which mean added profit and load balancing. Those in the industry who practice good business management have confirmed the fact that load balancing is a necessary ingredient to profitable operation as an L.P. gas distributor. In this highly competitive industry, continuation of good management practices, aggressive selling, and providing a superior service to the user will result, as ever, in a growing and prosperous L.P. gas industry. ■

Marketed Production of L. P. Gas

Year	TOTAL		DOMESTIC AND COMMERCIAL (1)		MOTOR FUEL		INDUSTRIAL AND MISCELLANEOUS		GAS MANUFACTURING		CHEMICAL MANUFACTURING		RUBBER COMPONENTS	
	Volume	% Increase	Volume	% Increase	Volume	% Increase	Volume	% Increase	Volume	% Increase	Volume	% Increase	Volume	% Increase
1922	223													
1925	404	7.2												
1928	4,523	314.6	2,600				400		1,500					
1930	18,017	81.4	11,800	100.0			2,200	46.7	4,000	60.0				
1935	76,855	36.2	21,380	20.9			47,894	47.6	7,581	20.4				
1937	141,400	32.6	40,823	36.0			62,610	(3)	11,175	19.3	26,792			
1940	313,456	40.2	134,018	53.1			124,482	32.8	20,285	31.4	34,671	29.0		
1944	1,060,156	(4)	445,617	29.2			254,590	7.3	45,879	22.3	151,985	175.0	162,085	
1945	1,276,766	20.4	533,262	19.7			256,577	0.8	53,849	17.4	224,291	47.5	208,787	28.8
1950	3,482,567	22.8	2,022,464	24.3	129,818(2)		225,638	33.4	251,694	5.2	824,468	14.6	228,485	28.5
1951	4,227,275	21.4	2,166,813	7.1	289,991	123.4	269,408	19.4	281,692	11.9	844,507	35.2	374,864	64.1
1952	4,477,379	5.9	2,266,178	4.6	370,558	27.8	338,959	25.8	259,697	-7.8	870,990	3.1	370,997	-1.0
1953	4,932,009	10.2	2,479,180	9.4	498,238	34.5	374,233	10.4	222,430	-14.4	967,427	11.1	390,501	5.3
1954	5,125,533	3.9	2,626,808	6.0	547,204	9.8	401,615	7.3	191,932	-13.7	1,050,239	8.6	307,735	-21.2
1955	6,122,718	19.5	2,801,379	6.6	651,821	19.1	556,371(5)	38.5	213,760	11.4	1,493,177(6)	42.2	406,210	32.0
1956	6,635,763	8.4	3,001,021	7.1	773,471	18.7	630,273	13.3	212,293	-0.7	1,600,604	7.2	418,101	2.9
1957	6,939,121	4.6	3,067,070	2.2	805,056	4.1	685,313(7)	8.7	231,155	8.9	1,732,338	8.2	418,189	0.0
1958	7,591,400	9.4	3,534,300	15.2	821,200	2.0	748,400	9.2	254,500	10.1	1,869,200	7.9	363,800	-13.0

(1) Househeating and other household and farm uses. Included also is LP-Gas sold by domestic distributors but used for commercial or industrial purposes.

(2) For all years prior to 1950 the Motor Fuel volumes are included in the Industrial and Miscellaneous volumes.

(3) Not comparable due to segregation of chemical manufacturing.

(4) Not comparable due to inclusion of rubber components.

(5) Includes more complete coverage of refinery fuel.

(6) Includes more complete coverage of LPG mixture streams containing ethane and methane.

(7) Includes volume used in secondary recovery of petroleum.

REMARKS: In this table total sales for all years except 1958 were obtained from U. S. Bureau of Mines reports. Distribution for the years 1935 to 1957 inclusive, was obtained from the same source. All other volumes were estimated by the writers. The total sales volume includes all LP-Gas (propane, butane, and propane-butane mixtures) when sold as such. Until 1944 the sale of pentane when sold for any purpose other than motor fuel blending was included. Since then it has been excluded. It does not include butane when blended with heavier petroleum fractions for motor gasoline purposes. Inter-company sales transactions such as purchases of LP-Gas by one company from other companies and resold as LP-Gas have been eliminated in order to avoid duplication of sales figures.

**BPN**

Washington Report

From BUTANE-PROPANE News Washington Bureau

Let's look at 1959

By NEIL REGEIMBAL • Washington Editor

A SIAMESE government, with one body (Congress) pulling toward the left, and the other (the White House) pulling toward the right, will mark Washington activity in 1959.

The effects on business will be both good and bad. Some startling legislation is in prospect from a Congress overwhelmingly controlled by Democrats fresh from a landslide victory at the polls last November. In both Senate and House, the Democrats hold a majority very close to the two-thirds needed to override any Presidential vetoes.

Political experts expect the first months of 1959 to see a constant jockeying for position, with plenty of fighting between the legislative and the executive branches of the government.

In the long run, this head-butting will tend to kill most so-called "conservative" proposals of the President for budget cutting and more realistic interest rates for rural electrification loans and cooperative taxation. Some of the "liberal" spending and legislative plans of Congress, however, will have to be modified to get past the White House, and the result is likely to be some legal monsters spawned in a mutation usually termed legislative compromise.

For the Democrats, their top-heavy power in Congress is a mixed blessing. It always intensifies prob-

lems of party discipline for the majority, but causes the minority to close ranks and vote more often as a solid bloc.

Here's the outlook for some of the major legislative proposals affecting L. P. gas dealers and businessmen generally:

★ REA curtailment

President Eisenhower is again expected to urge Congress to increase present subsidy interest rates (2 per cent) on REA and similar loans to cover their costs to the government. In addition, he will again urge the co-op power projects, started and operated thus far with government funds, be sent to regular commercial markets for at least a part of their financing.

But congressional insiders give such legislation almost no chance of passing, in view of the makeup of the new Congress and its expected liberal bent. A strong grass roots campaign in support of these proposals might, however, force some slowdown in this government subsidy even though legislation can not be enacted.

★ Farm co-op taxation

This is another program likely to die at the hands of the new 86th Congress. Treasury Secretary Robert B. Anderson and key conserva-

tive lawmakers have already begun pushing for legislation which will put these co-ops (most of which sell merchandise to farmers at cut rates in competition with private business) on a more-equal taxpaying footing with other business. But removal of the present tax exemption stands little or no chance of passing.

★ TVA expansion

President Eisenhower last year managed to head off a drive to cut the massive, subsidized Tennessee Valley Authority loose from the government and permit it to go further into competition with private firms. This year, however, he is not expected to be able to block the move.

The TVA gained many friends in Congress as a result of the November elections. Such TVA stalwarts as Sen. Estes Kefauver (D.), Tenn., have already announced they'll push hard for legislation which would permit the TVA to sell its own revenue bonds. This would permit it to collect funds for expansion without any congressional check on the need for such expansion. Thus, the voters may well loose the last vestige of control over this government power empire.

★ Taxes

Some of the most bitter political fights in 1959 will come over various tax proposals. In the final outcome, however, there is little chance for any major changes.

The Democrats have already mapped a drive to eliminate what they term "loopholes" in present tax laws. This program, they say, will take two years—a year to uncover them all, and another year to secure passage. Already on the list are a reduction in the 27½ per cent oil and gas depletion allowance; a reduction in the use of capital gains taxes to replace ordinary taxes; an increase in taxes on dividends and interest, and a possibility of increased taxes on foreign investment.

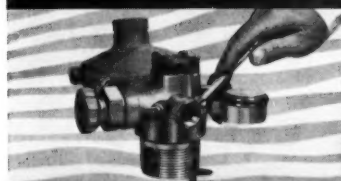
A tightening up of farm co-op taxation, already discussed, is also mentioned by some of these Demo-

ON EACH BULK TRUCK...

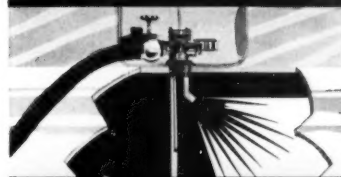
Save up to \$2,215.00 a year with Beaird Jet Filled LP-Gas Systems



HOSE SAVING HORIZONTAL FILLING CONNECTION—Prevents accumulation of snow, water or trash in valve opening. Reduces operator fatigue—speeds filling.



SAFE LIQUID WITHDRAWAL OPENING—with new Rego Chek-Lok excess flow valve—for economical truck and tractor fueling. Built-in excess flow valve held shut until released by insertion of shut-off valve.



FAST JET FILLING—Saves gas, requires no vapor return hose. Fills at full bulk truck pump capacity.



National figures prove that it costs nine cents a minute to keep one bulk truck on the road. Filling a standard dip tube type 250-gallon LP-Gas system requires nine minutes and costs the dealer 81 cents. Yet it can be done in only two and eight-tenths minutes, for a savings of 54 cents, when the dealer takes full advantage of the faster filling rates possible with Beaird Jet Filled LP-Gas Systems.

Designed to fill at maximum pump rate (up to 70 gallons per minute) without a vapor return line, Beaird Jet Filled LP-Gas systems turn pump rated capacity into full usable capacity. With this combination, a high capacity pump and Beaird systems, savings up to \$2,215.00 a year in filling time are possible with each bulk truck you operate.

Money saving filling rates are only one of the many advantages dealers have when they standardize on Beaird LP-Gas systems... *here are other plus features:* Highest Quality Construction • UL Approval • Moisture-free-complete dehydration • Dealer Merchandising Aids • Stocking Point Program • Long Term Financing for Lease Plans • Complete Range of Sizes.

Send for Bulletin #2669 today... the filling rate charts show how much you can save with your bulk truck plus Beaird Jet Filled Systems.

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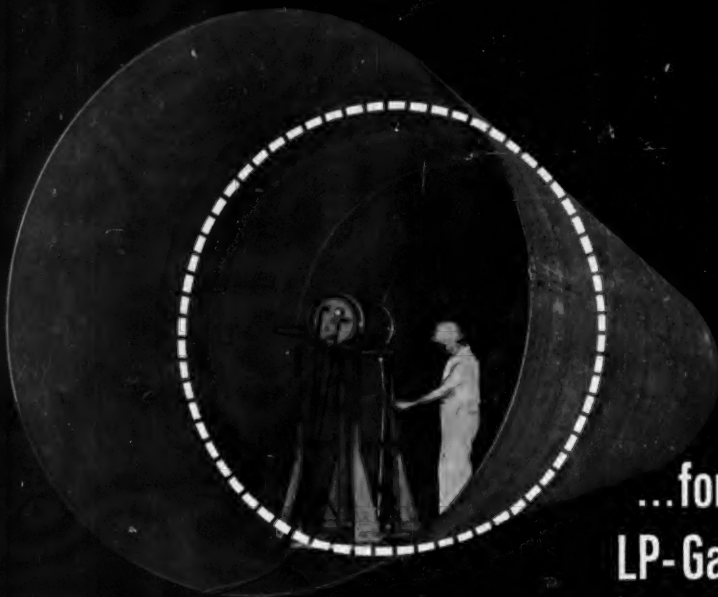
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All X-Ray film and every inspection report made on a Beaird pressure storage vessel is retained in a file at Beaird for five years.

Beaird dealer storage is available from 2,000 w. g. to 30,000 w. g. capacity. Other sizes to 200,000 w. g. available to your specifications.

This amazing new GE Resotron X-Ray machine, now installed at Beaird, sees through an entire 360° circumferential seam at a single exposure. Twenty-nine times faster than ordinary X-Ray equipment, it is also many times more powerful.

The importance of the Resotron can best be judged when it is realized that over 323 feet of X-Ray film are exposed and minutely examined on a single 30,000-gallon Beaird pressure storage vessel.

Full 360° X-Ray is just one of the many advanced inspection and fabrication procedures in Beaird's system of "Controlled Quality" construction. It starts in the engineering department where modern design combines with 40 years manufacturing experience in developing safe, dependable pressure storage. In purchasing too, strict adherence to specifications is followed in obtaining all materials.

As the vessel is built, every task from forming to shaping and joining is carefully supervised. Constant checking by skilled Beaird inspectors and a resident insurance inspector assures highest quality construction.

All Beaird pressure storage vessels are stress relieved, thoroughly tested and certified before leaving the Beaird yards.

Why accept less safety? Check with Beaird on "Controlled Quality" pressure storage vessels for your next installation.

All Beaird pressure storage vessels are stress relieved for safe storage of Butane, Propane and Anhydrous Ammonia as well as all other pressure stored products.



THE J. B. BEAIRD COMPANY, INC.

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Shreveport, Louisiana

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cratic leaders. But most observers agree that this is one proposal that will be dropped before any final bill is passed.

Drives to both increase and decrease regular taxes are floating around the halls of Congress. The Eisenhower Administration is split on the matter. Some Administration officials have publicly supported tax cuts this year in order to spur the economy. Others, however, are backing higher taxes to dry up some excess funds, to reduce the massive \$12 billion federal budget deficit expected this year, and thus ease inflationary pressures.

Most Democrats, however, appear ready to favor a big tax cut if they get the chance. They figure this will be a real boon in 1960 when they attempt to add the White House to their list of recent election victories. Democratic leaders have, for the time being, ruled out immediate tax cuts.

Reductions in corporate and excise taxes, sponsored by the Republicans, are being scrapped. These are too often touted as "business tax cuts," and won't be pressed this year. There will be lots of talk in 1959 about instituting a new national manufacturing excise tax to replace present selective excises. This proposal, sponsored mostly by Republicans, has too many enemies to succeed.

★ Housing

Congress and the Administration are going to vie in 1959 to see which can come up with the biggest new housing bill. Whoever wins the contest, one thing is certain: The housing industry will get another hefty shot in the arm; suppliers, including those selling ranges, furnaces and other appliances, and firms supplying such items as L. P. gas, will also benefit.

The Eisenhower Administration is ready to propose a program which will include a major increase in the government's authorization to insure home mortgages. This is expected to top \$4 billion to keep up with mounting requests for FHA and GI home mortgage insurance. The Democratic program will call for a large increase in public housing authorizations; a new program of college housing under

direct government loans at 3½ per cent, and a \$500 million a year urban renewal program.

★ Postal rates

Another sharp increase in mail rates is possible. Despite rate boosts which went into effect in 1958, the Post Office Department is continuing to lose money at a staggering rate. The deficit for this fiscal year (ending next June 30) is expected to hit almost \$400 million. This is up sharply from earlier estimates. Expenses, the Department says, have been rising faster than rates.

There is a strong indication that the Department will ask for another one-cent boost in first class mail rates. This would bring the rate to five cents. A hike in parcel post rates is now pending. Other changes which will help reduce the deficit are also a strong possibility.

★ Minimum wage

Union leaders, counting the November elections as a sweeping victory, are preparing an all-out drive to raise the present \$1.00 an hour minimum wage to \$1.25. This increase would be combined with extension of the minimum wage-hour law coverage to types of firms now exempt, including larger retail stores and service and wholesale firms.

With a clear majority in Congress, the unions stand a good chance of winning some, if not all, of their proposed "liberalization" of the minimum wage-hour law.

Several groups of businessmen, including organized retailers, are preparing a campaign to try to stop the union drive. They argue that the effect will be to drive some firms out of business, thus hurting employment. They also point out that the smallest firm, even though it re-

tains an exemption, will be faced with higher costs because it will have to meet higher wages in its competition for help. Their chances for success are considered dim.

★ Fair trade

New federal fair trade legislation, replacing shop-worn and sagging state laws, is a clear possibility in 1959. Legislation to permit resale price maintenance on a national scale made some headway in the last Congress. Traditionally, these proposals have drawn support from both Republicans and Democrats who have championed the small business segment of the economy. Thus, there is a good chance that a measure will succeed on the crest of an expected small business drive this year.

Most likely is a measure drafted by small business advocates and introduced in 1958 by Rep. Oren Harris (D.), Ark., and Sen. Hubert Humphrey (D.), Minn. This would permit manufacturers to control the resale price of merchandise much as they now control trademarks.

★ Small business

Additional legislation aimed specifically at helping small firms is expected to pass the new Congress. Further liberalization of small business taxes is a major possibility. This might be done by lowering the present basic corporation tax rate of 30 per cent to 22 or 20 per cent on the first \$25,000 of profits a year. Another possibility is permitting small firms to deduct from taxes on up to \$30,000 or \$50,000 a year in profits plowed back into a business.

★ Depressed areas

Legislation to boost depressed areas, similar to that vetoed by President Eisenhower in 1958, stands a good chance of becoming law in 1959. Democrats sponsoring the program are expected to pass such legislation and probably will be able to override a Presidential veto if one comes again. This legislation would provide some \$300 million to help areas with chronic unemployment get back on their feet through loans and grants.



Let's look at 1959 . . . Drop in farm income, battle to hike gasoline taxes, and danger of growing inflation

★ Farm

With farmers facing a drop in net income in 1959—after two years of rising income—some new and broader farm legislation is in prospect.

The size of the Democratic control of Congress also strengthens the possibility of more aid to farmers. Democrats have long been severe critics of GOP farm policies, and now are expected to develop their own programs. Agriculture economists predict that farm income will fall by 5 per cent in 1959, without extra government help.

★ Gasoline taxes

Firms making extensive use of trucks, such as L. P. gas dealers, are facing another hike in gasoline taxes. Congressional experts are predicting a real free-swinging battle to develop in 1959 over an Eisenhower Administration proposal that the Federal gasoline tax be raised by 1 or 2 cents a gal. The proposal is touched off by the prospect that the new highway building program will run short of funds—by as much as \$1 billion by 1960, and another \$1 billion in 1961—unless new revenues are developed to pay for the cost of the new roads.

In the past, at least, the highway program has been paid for out of special taxes levied on gasoline, tires, and other products consumed by those who use the highways. There is some talk of foregoing higher taxes on these products and dipping into general government revenues, but most fiscal experts are against this since the government is already running some \$12 billion in the red in the current fiscal year.

★ Labor

The twin-pronged question of union power and corruption will touch off some explosive battles in the new 86th Congress. Businessmen are likely to come out on the short end when the final smoke of battle clears. The fight over new

labor legislation will pinpoint just how much control of the national legislature the unions really won in the November elections.

Labor leaders now are sponsoring a bill similar to the Kennedy-Ives bill defeated in the last Congress. Most business groups consider this measure meaningless as far as curbing undue union power or cleaning up some of the racketeer-riddled labor organizations. The few amendments to the basic Taft-Hartley Act which this measure did contain would have weakened the act, business groups say, and actually strengthened the union stranglehold over the nation's economy.

Sen. John L. McClellan (D., Ark., chairman of the Senate Rackets Committee, is preparing his own legislation to press in 1959. The McClellan measure will be stronger than the Kennedy-Ives bill, but probably still fall short of the reforms and controls which most businessmen have sought.

One of the most explosive measures which the business community will probably demand in the new year is a proposal which would put unions under control of the antitrust laws. This, they say, would prevent unions from "ganging up" to break one or more firms, and would put them on an equal "individual" footing with the business firms with which they are dealing.

This plan, however, stands little chance of passing.

The fight will settle probably on business efforts to have included in any labor bill a provision prohibiting so-called organizational picketing, or picketing by strangers not employees of the firm in question, and strong bans on secondary boycotts.

★ Economy

There will be little in the way of legislation aimed specifically at boosting the economy. Most government economists believe that business is on a definite upturn that

will carry through 1959. For the year as a whole, a gain of better than 7 per cent over 1958, which was hurt by recession in the first few months, is forecast.

But they also see a danger of growing inflationary trends accompanying the upturn. Although prices remained fairly steady last fall, wages continued to rise. With further wage hikes in prospect in 1959, and the possibility looming of strikes in some major industries, including steel, this price stability could break at any time. Price hikes would follow, and the result would be another squeeze on profits.

There will probably be talk in Congress of imposing standby wage, credit, and price controls, so that the government could clamp them on whenever inflation threatened to get out of hand. There is little possibility, however, that this will progress past the talk stage.

★ Political action

The stirrings of businessmen as a group into active politics started during the fall election campaigns and is expected to continue in 1959. Major business groups are already setting up programs of political action which their members may follow—as individuals. This drive, if it continues, may have a counterbalancing effect on trends as they are now predicted.

One of the most pressing needs in this campaign, according to political strategists, is to get businessmen to act between elections. While the unions continually bombard members of Congress with demands for passage or defeat of various proposals, the business community too often is sitting and fussing mentally—but not taking action.

Businessmen should continually be writing, wiring, phoning or talking to their home state congressmen and senators, and to committee chairmen on their views, needs, and demands as each congressional session progresses, these experts advise. ■

Pyrofax Gas launches new home study course

By WILLIAM W. CLARK • Editor



Servicemen who qualify earn a Master Serviceman rating, allowing them to wear this sleeve emblem.

HOW well do your servicemen know their business?

This is a question mark that Pyrofax Gas Corp. is constantly concerned about. In trying to assure that its franchised dealers will be able to give a favorable answer at all times, the company has long carried on an extensive training program.

Its latest tool, fashioned in 1958, is a Gas Service Home Study Course for its dealers and their personnel. This is a course planned to make the serviceman a better qualified employee, one who will build good will for his employer by doing a more expert job on the appliances and equipment he services. Almost equal in importance is the fact that it will give him a stronger sense of participation, a pride in his work, and a bond with his company.

The program fulfills a need for a supplement to the classroom training which Pyrofax has in the past offered to servicemen in the divisions. This training was in the form of service schools held locally whenever and as often as regional needs required. Additional field training has also been given on new

and specialized fields for utilization, such as carburetion, conversion, metal cutting, etc. These programs are being continued with no letup in emphasis.

But blanket coverage of employees was needed. It had to be coverage that was not dependent upon schedules and availability of the designated instructors. It had to be planned to permit employees to work on their own time and at their own convenience, and it had to be suitable for both new employees and old.

In general, the company's training program has been rooted in two central locations. One is at the engineering and development laboratory at Millwood, N. Y., the other at the Linde Air Products plant at Speedway City, Ind. Here there were resident classes, which servicemen as well as supervisors were invited to attend.

But Pyrofax wanted a curriculum which all servicemen could study at home. W. H. Scott, the company's service manager, planned and outlined a series of seven courses, and contracted with Earle Clifford, a leading LPG educator, to prepare them for Pyrofax gas distributors.

Ultimately, in collaboration with Pyrofax service training personnel, Clifford developed a seven-course program of study, broken down as shown in Fig. 1.

These courses are conducted along the lines of conventional correspondence courses. A lesson at a time is issued to the employee. This includes an examination sheet

which he mails in when he has completed the lesson. The sheet is then graded and returned to him with a copy of the next lesson. On completion of a course, he is eligible to move on to the next one.

To stimulate a serviceman to begin the course and, more important, to complete it, Pyrofax has established some strong incentives. First of all, the cost is low—a \$10 deposit is all that is required for each course. But this is returnable if the student is conscientious: if he satisfactorily completes the first course in 16 weeks, the \$10 is refunded, or applied on the next course if he wishes to continue. As each course is completed within the prescribed time, the deposit is repeatedly made returnable or applicable on the succeeding course. If the entire school is finished, and each course is finished within the 16 weeks allotted, the original \$10 is returned for him to keep.

Secondly, successful completion of the first three courses (21 lessons), combined with certain other accomplishments, will bring recognition of a sort that appeals to every employee. It qualifies the serviceman for a special top rating as "Master Serviceman," entitling him to wear a "Pyrofax Gas Master Serviceman" sleeve emblem and to carry a master serviceman card in his wallet.

The other activities required for this rating are:

1. He must have had at least one year's experience in servicing and installing gas equipment and appliances.



Fig. 1—HOME STUDY CURRICULUM

COURSE NO. 1

L.P. gas Installation

1. LPG characteristics related to fuel handling
2. Safety regulations related to fuel handling
3. Accessories: relief valves, excess flow valves, etc.
4. Pressure regulators
5. Cylinder installations
6. Tank installations
7. Fuel delivery, cylinder and bulk trucks

COURSE NO. 2

Basic Engineering Fundamentals

1. Properties of L. P. gas
2. Mathematics for the gas man
3. Measurement of fuel gases
4. The gas laws
5. Vapor pressures of L. P. gases
6. Vaporization of LPG
7. Sizing of heating systems
8. Seasonal heating costs with LPG

COURSE NO. 3

Combustion

1. Combustion of gases
2. Atmospheric burner design
3. Orifice capacities
4. Capacities of burners
5. Building pipe burners
6. Venting gas appliances

COURSE NO. 4

Gas Controls

1. Safety pilots
2. Gas thermostats
3. Electric thermostats
4. Electric gas valves and limit controls

5. Self-generating controls
6. Basic principles of electricity

COURSE NO. 5

Gas Appliances

1. Gas ranges
2. Water heaters
3. Gas refrigerators
4. Space heating with LPG
5. Clothes dryers
6. Incinerators
7. Agricultural application of LPG
8. Commercial appliances

COURSE NO. 6

Industrial Utilization of L. P. Gas

1. Opportunities for LPG in the industrial field
2. Fundamentals of combustion
3. Gas burners and combustion systems
4. Combustion safety equipment
5. Heat application fundamentals
6. Temperature and pressure controls
7. Competitive fuels and conversions
8. Typical industrial applications

COURSE NO. 7

L. P. Gas Carburetion

1. LPG and internal combustion engines
2. Basic engine principles
3. Fuel combustion in engines
4. Types of carburetion systems
5. The fuel supply system
6. The ignition system
7. Engine testing equipment
8. Converting engines to LPG
9. Installation, adjustment and trouble shooting
10. Sales and economic factors of LPG carburetion

with his name. This is presented yearly to the single most outstanding serviceman in each division. To be considered for this honor, the master serviceman must have maintained a consistently high level of performance in his work.

Aside from these incentives, the employee will have the personal satisfaction of having accomplished something requiring a good deal of effort and concentration. He will have made himself more valuable to the dealer for whom he works, thereby putting himself directly in line for a later promotion. He will have solidified his own position, not only with his employer but within the industry itself.

The emblem is something that can be worn with a great deal of pride.

The entire program is aimed at upgrading the quality of service throughout the entire network of Pyrofax dealers. Accordingly, the distributor himself has also been placed in a position to win recognition for his efforts. In each division, an outstanding distributor is selected annually. His reward is a plaque, given him on the basis of his ability to retain present customers, his participation in various "customer retention" campaigns, the quantity of completed inspection cards he sends in, and his service personnel's participation in all phases of training.

The campaign is an extremely important one in the Pyrofax scheme of things. For the company knows full well that, aside from the quality of the gas delivered, the dealer has only one thing to sell: Service.

2. He must have attended a Pyrofax one-week service school.

3. He must have personally inspected at least 25 customer installations during the past year.

This last requirement was set up in part to promote the Pyrofax inspection program (see Fig. 2). In this program, dealers are urged to send out postcard mailers offering to perform the following six checks at a special price set by the dealer himself:

1. Adjusting all burners and pilots.
2. Testing gas valves.
3. Checking oven temperature controls.
4. Checking flues.
5. Checking piping.
6. Checking cylinder and regulating equipment. (The last three are done "at no additional charge.")

This program itself carries an additional reward for the servicemen in the form of a semi-annual competition for prizes. A point system has been set up whereby each inspection is worth six points and each gas appliance sale resulting

from an inspection is also worth six points. The two servicemen in each division earning the highest and second highest point totals in each half-year period win prizes of \$100 and \$50 respectively.

The Master Serviceman Classification also entitles the employee to a tangible benefit by making him eligible to win the annual "Distinguished Master Serviceman Award," a gold watch engraved

GAS APPLIANCES NEED INSPECTION REGULARLY!

Are YOURS operating at top efficiency?

The best way to keep any appliance in peak condition, prolong its life, reduce fuel bills and avoid breakdowns is to have it checked at least once a year. Our trained serviceman will call at your home on his next regular trip in your locality and attend to any adjustments that may be necessary. The special price for this service is just \$

It includes:

1. Adjusting all burners and pilots
2. Testing gas valves
3. Checking oven temperature controls

AND AT THE SAME TIME, AT NO ADDITIONAL CHARGE TO YOU, OUR SERVICEMAN WILL:

4. Check flues
5. Check piping
6. Check cylinder and regulating equipment

TAKE ADVANTAGE OF THIS SERVICE INSPECTION.
RETURN THE ATTACHED POST CARD TODAY!

Fig. 2. Postcards such as this promote the Pyrofax inspection program.

A SMALL, locally-edited newspaper has had a large part in helping Allen Butane Gas Co., Denton, Texas, to experience one of the best sales years in its history.

The newspaper, a tabloid that varies in size from 8 to 16 pages, is issued periodically to tie in with the company's special and seasonal sales programs. Editorial consists of news of local events in the area and articles that tie in with the special subject of the issue. Advertising in each issue promotes the company's gas service and special appliance sales programs.

Each issue is distributed as a supplement in the Denton *Record-Chronicle* and by mail throughout the company's service area. The supplement is printed as a special section of the *Record-Chronicle* while the mailed copies are called *Allenews*.

The idea for the newspaper was worked out with our advertising agency, Warren K. Bredlow Advertising Agency, and the local Denton newspaper. The first issue, called "Allen's 21st Anniversary Celebration," was published in the spring of 1958. Since then we have printed nine more issues; the most recent of which are our Thanksgiving and Christmas issues.

Should be simple, well planned

In working out the tabloid newspaper idea we have followed the same principles that have guided us in all our sales and advertising programs. We feel that the most effective sales program is one that is simple, well planned, and designed solely to best accomplish the desired end—the sale of gas and appliances. Our theory is that sales programs need not be new or sensational. Instead, we feel that such programs should be based on sales and advertising principles that have been used successfully over the years and have proved to be sound. Once established, we feel these principles should be applied consistently and vigorously in order to be most effective.

In the words of Warren K. Bredlow, who has had a vital part in guiding and carrying out our advertising and sales programs for many years, "There is nothing ingenious about taking something that has become a success up to this



The Christmas edition of *Allenews* shown above featured Christmas recipes by Denton, Texas, housewives.

**We publish our
own newspaper
to sell gas**

By H. R. (BUCK) PEMBERTON • Vice President
Allen Butane Gas Co., Denton, Texas



"Average operating cost per mile for our 10 Ford bob-tails is only 4.5 cents"



*says L. T. Ortego
Office Manager
Superior Butane Co., Inc.
Opelousas, Louisiana*



"Operating economy, dependability and high resale value keep us 100% Ford!"

"Our F-600 Ford trucks, carrying 1500-gallon butane tanks, have proven very economical. The 4.5-cents-per-mile figure includes all fuel, oil, parts and labor costs. That's especially good when you consider that the truck engine puts in plenty of pumping time, both on loading and on deliveries—hours of running that don't show up on the speedometer.

"We run other Fords ranging from F-100 pickups to F-800 tractors. Maintenance costs are lower than on other trucks we've used, and

the ready availability of Ford parts minimizes downtime. Ford's high resale value is another reason we use them . . . makes it profitable for us to trade every 24 to 30 months.

"Our 15 Ford trucks are on call 24 hours a day, and the worse the weather the more our trucks run. In the winter they'll go up to 72 hours steady without stopping the engine . . . we just change drivers. In the past we've used about every make truck and have found Fords best for our work."



Go FORD-ward for savings with '59 Ford Trucks!

Whatever your job . . . wherever you do it—you'll find Ford trucks are engineered and built to do it better! And the '59 improvements in the Mediums and Heavies, for example, will bring still more benefits to your operation.

Greater operating economy with new, faster rear axle ratios and wider choice of transmissions.

More efficient parking brake of the internal expanding type has approximately 50% greater stopping and holding ability,

requires less than half the operating effort needed for the previously used type.

Increased payloads and longer axle life with new, higher-capacity front and rear axle options.

Factory installed tractor package custom-fitted to Ford trucks for safer, more dependable braking.

Yes, the new '59 Ford trucks are here to take you *Ford-ward* for savings, *Ford-ward* for modern style and stamina. See your Ford Dealer today!

FORD TRUCKS COST LESS

LESS TO OWN...LESS TO RUN...LAST LONGER, TOO!



H. R. (Buck) Pemberton, seated at desk, vice president of Allen Butane Gas Co., goes over a copy of *Allenews* in a planning session with Warren K. Bredlow, Warren K. Bredlow Advertising Agency.

point and expanding upon it." Our approach to the tabloid newspaper promotion is a good example of how we have applied this theory in practice.

Allen Butane Gas Co. distributes gas in a five-county area that extends from 50 to 75 miles in all directions from Denton, which is located about 40 miles northwest of Dallas. The company operates five retail stores in the area. Allen Butane is associated with the North Texas Tank Co., Nortex Products Co., A & A LPG Transport Co., and Bapco Inc. The latter, a financing company, is the most recent addition to the group of companies.

Tie in with special event

Each issue of the tabloid newspaper is timed and edited for a special or seasonal sales event. Issues have been built around such special sales promotions as a "Young Homemakers" sale, a "Stock Removal" sale, a "Trade Up" sale and a "Food Freezer" sale. Seasonal issues have been built around Mother's Day, the area fair, a fall festival, Thanksgiving, and Christmas.

Once a theme for a special sales event has been decided upon, the tabloid newspaper becomes a part of a complete sales campaign built around the idea. Each store is dec-

orated to conform with the sales event, and special sales promotional ideas are devised to tie in with the campaign.

Meetings are held with representatives of the *Denton Record-Chronicle* to set up the editorial content of each issue. Following our policy of keeping our programs simple in order to make them effective, we try to place emphasis on editorial that will be of greatest local interest to our readers and, at the same time, give them something that will be helpful. We believe that "all news is local," and we make every effort to keep our editorial on a down-to-earth level.

Kitchen helps and recipes

A great deal of editorial in each of our issues has had to do with kitchen helps and new recipes. Whenever possible we try to get local persons in our area to tell us about their own favorite recipes, or about some unique idea or hint how they have saved time or money around the house.

For instance, in our "Fall Festival" issue we used a front page article on a recipe for banana cream pie that was devised by Mrs. Straughan, a local housewife. The article also told about Mrs. Straughan's family and their hobbies, and included a picture of her

in her kitchen. Our "Food Freezer" issue carried a recipe on ham and eggs with frozen french fries.

To tie in with our "Young Homemakers" issue we picked a young couple as being representative of all North Texas prospective brides and grooms. Our front page article on the couple told of their prospective marriage. We used pictures of them inspecting various gas appliances in advertising that appeared in the issue. Other articles in the same issue gave hints on homemaking for young couples about to be married. The issue even included a list of suggested wedding gifts, which, of course, included some gas appliances.

Our "Area Fair" issue was timed for the North Texas State Fair, and carried several news stories and pictures on the fair. This gave us a golden opportunity to use an interesting and worthwhile article on the use of LPG in farm tractors.

Subtle approach to sales

In planning the editorial for our issues we never overlook the possibility of making a subtle approach to sales. For instance, in our "Food Freezer" issue we carried a front page article on the antiquated ice card. In other issues we have carried articles on how a pending rise in the price of steel will necessitate an increase in the price of appliances, and on how oil quotas affect the price of butane.

And, of course, we are always anxious to tell about our own operation. In our "Trade Up" issue we used an article on our newly-installed mobile radio system, and how it would be used to speed up the delivery of gas.

After the editorial is planned and laid out for an issue, reporters from the *Denton Record-Chronicle* take over and prepare the material. Articles are written and pictures are made in accordance with the plans we have decided upon.

While work on the editorial is progressing, we plan and lay out the advertising for each issue. The theme of the advertising ties in with the subject of the issue. Individual advertisements are built around the various brands of appliances that we sell, and each gives prices and special offers for

the sales event. Our "Food Freezer" issue as well as our "Fall Festival" issue featured our line of food freezers. Our "Trade Up" issue featured kitchen ranges.

The advertisements vary in size from double page spreads to small partial page advertisements on minor appliances. No advertising is used on the front page, but the back page is all advertising. The center spread of the newspaper is always a two page advertisement. In some issues we use a page of bargain "close out" items.

Two-phase distribution

After the editorial has been completed and the advertising pages made up, a "dummy" copy of the newspaper is prepared for the printer. Printing is done by the Denton *Record-Chronicle*. About 15,000 copies of the newspaper are printed with a *Record-Chronicle* masthead. These copies are inserted into one of the regular issues of the newspaper as a supplement for distribution to the newspaper's regular subscribers. The masthead is then changed from *Record-Chronicle* to *Allennews*, and an additional 50,000 copies are run for mail distribution throughout the company's service area. These copies are distributed by bulk mail to every rural home in the area not receiving the daily *Record-Chronicle*.

Additional copies of the newspaper are distributed by the company's driver-salesmen to their cus-

tomers and prospects. The Thanksgiving issue was printed and distributed in early November, and the Christmas issue in early December.

We feel that our tabloid newspaper has been a worthwhile project in a great many different ways. For one thing, it has served to coordinate and pull together the various elements of our sales campaigns. Although the newspaper is only a part of each sales event, it is the one basic, company-wide promotion piece that includes everything about the event. As such it is of value to our own sales people as well as our customers and prospects.

Excellent response

We know that the newspaper is read and that it sells for us because people from miles around come to our stores in response to the advertising in each issue. A great many of them purchase merchandise we would not have sold without first getting them into our stores.

The newspaper is also evidence to those in our service area that Allen Butane Gas Co. is a reputable and well-established firm with which to do business. Not only this, but it is also evidence of our interest in the people in our community. These people are interested in the news items about themselves and their neighbors, and appreciate the fact that we go to the time and effort to publish

Want a copy of Allennews?

Back copies of Allen Butane's tabloid newspaper, *Allennews*, are available to any L. P. gas dealer interested in seeing one. To receive a copy, at no charge, drop a note to the Editor, BUTANE - PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

and distribute our own newspaper for them.

One advantage came to light that we had not anticipated. While the newspaper and our other merchandising plans attracted customers, the resultant increased buying in Allen stores has attracted manufacturers with offers of lower wholesale prices because of volume buying. Today we are in a position to buy more quality merchandise at lower prices than ever before.

Local ad manager glad to help

For these and other reasons we feel the tabloid newspaper program has been a worthwhile one for us, and one that we would recommend to other L. P. gas dealers. Some dealers might be in a position to do a more elaborate job than we have done, while others, because of their smaller size, may find it necessary to operate on a smaller scale. Your own local newspaper advertising manager will gladly help you along these lines in every way he can.

The important point to remember is that the newspaper alone will not do the entire job. It is only a part of an overall sales campaign that must be backed up by vigorous selling and all the other elements of any sales program.

In-so-far as the newspaper itself is concerned, you must remember that you are dealing with the day-to-day events of the people in your area. Therefore, the editorial must be selected and written at this level. Again, the newspaper is only a selling tool, and if it is going to do its part of the job you must have readers. And to get and hold readers you must publish items that your customers and prospective customers will find interesting and worthwhile. ■

One of Allen Butane's appliance stores is shown below. Store displays tie in with the current theme of the dealership's newspaper.





FOUND: \$30,000

An open letter to BUTANE-PROPANE News

DURING a one-year period our relatively small L. P. gas business serving 1800 customers increased its available working capital more than \$30,000.

To accomplish this we did not have to borrow any money. We did not take in any new partners or sell any stock. We had this capital all the time, but it was on the books as overdue accounts instead of being in the bank or in saleable inventories. We just installed the kind of credit control program that we should have been using all the time, and presto—we came up with the money that we so sorely needed for the improvements and expansion that we were planning. This extra working capital did not cost us a cent. In fact, the steps that we took saved us a considerable amount of what we had formerly been losing in uncollectable accounts.

Fantastic? We do not think so. From what we now know, we believe that a high percentage of the small LPG dealers around the country could perform a similar miracle by installing standard credit and collection procedures, as we did. And much to our surprise we did not lose any of our good customers. The cold fact is that getting our credit policy under control and letting people know that we are in the credit business has brought us many new customers.

But best of all, the new program has saved us from paying taxes on income that we have not yet received—and some of which we might never get.

Our accounts receivable had been a source of worry for a long time. There was too much of our profits tied up in these accounts. Another worry to us was that we had no definite credit plan. The fact that the total amount of our money contained in receivables had reached \$71,902.31 proved we were good salesmen. But we had hit a level in our business where I felt that this total should be going down instead of continuing to climb.

The total of \$13,195.24 of this \$72,000.00 that was 90 days and over 90 days delinquent didn't help the picture either. It proved that although we were good salesmen, we were poor credit managers. We kept on selling and trying to collect.

One day I had occasion to discuss my credit operation with a management consultant, W. E. (Bill) Locke of San Francisco. He specializes in assisting business firms that want to solve a retail credit problem, or prevent such a problem from ever happening. Bill explained his program, which was a package he delivered to a dealer. He would come to the plant and put his plan, which he called a "Standard Plan of Systematic Credit Management," into common practice. He would show us the way. He would not do the credit and collection job for us—just show us how to do it ourselves.

Now, I really thought I had cause to worry. I agreed with Bill that we not only should collect our delinquent accounts but should also install the necessary procedures to prevent such an accumulation from happening in the future. But his suggested plan seemed much too drastic. I was almost sure that such a program would cost us many customers. We are in a highly competitive trade area. Our customers would be flocking to our competitors. I assure you that I was wrong.

Our first step was to call my employees together and

L. P. gas dealer Maris Ward wanted additional operating capital for expansion of his growing business. He found it right in his own books which showed almost \$72,000 in receivables. By instituting a planned collection system, he brought in \$30,000 right away and there is much more to come. Here is how he did it.



...teamwork

Successful calf roping requires teamwork between man and horse.
A successful LP-Gas business requires teamwork between supplier
and customer.

The Sid Richardson Gasoline Co. gives to its customers that
cooperation —

- For nearly ten years we have maintained an unsurpassed
record for on-time shipments.
- Top quality product at competitive prices.
- No company-owned wholesale or retail outlet competition.

Why not select a Richardson contract and enjoy these teamwork
benefits?

Sid Richardson **GASOLINE CO.**

629 FORT WORTH CLUB BUILDING • FORT WORTH, TEXAS

REGIONAL REPRESENTATIVES

H. M. JONES
5123 NO. NEW JERSEY
INDIANAPOLIS, INDIANA

MARVIN L. DOSS
1118 GREEN STREET
ABILENE, TEXAS

B. E. PATTON
6446 XERXES SO.
MINNEAPOLIS, MINN.

tell them our plans. There was no advantage to be gained by hiring a credit specialist and not following his advice. Each employee was instructed to do exactly as they would be told to do. They would be taught to do their part in credit selling, account collections, taught how to do it and how to co-operate with our credit manager, a person yet to be selected.

I organized our dealership myself in 1946. Our average of 1800 accounts proves us to be in the same class with many LPG dealers with plants in towns where they have easy access to the usual local and rural consumers. Our three gas delivery trucks, delivering well over a million gallons of gas a year, and two servicemen, comprise the part of my staff in daily contact with my customers. None of my men have been trained in credit selling or in collection.

Not unlike many LPG dealers, most of our sales were being made on a credit basis. Under such circumstances, a dealer needs efficient and dependable credit control that he can have confidence in. We also do a large appliance business. We are the Whirlpool dealer in this area. We do a substantial business in automatic washers, dryers, water heaters and gas ranges. Since efficient credit management practices include knowing your customers, from a standpoint of their ability to pay, our plans for improvement of our credit department would also benefit our appliance department. We would reduce the ever-existent possibility of repossessions. Used appliances are usually a headache.

Our specialist said he would spend about a week with us at the start. I didn't think very much could be done in so short a time. Again I was wrong. The next step was to select a member of my staff to be the credit manager, and to teach him the mechanics of good credit management.

Among the forms our consultant provided was an initial letter that was mailed to each customer explaining our newly adopted credit plan. This letter paved the way for our next steps which included the necessary effective follow up forms, proper methods and types of result-getting collection letters that could be used without incriminating the dealer.

Proper techniques in telephone collection effort, skip tracing methods, and above all, proper aging of receivables and the classification of receivables were all introduced.

Classification is the proper method of account analysis to determine a customer's net worth to the dealer—from a standpoint of account value. In other words, what value should the dealer place on each account to intelligently decide the customer's net worth to the dealer as to future credit sales. Should the customer be traded up because he is a proven excellent credit risk? Should he be traded down because he is shaky, or should he be closed to further credit because he is unworthy of credit? This phase of our project was the most difficult to install. I have grown up in this area and I have many friends on the books. I was naturally biased in my opinions. I wanted to sell them more and more merchandise. This partiality was easy to overcome. I merely followed instructions. I passed the buck on to my credit manager. I stayed out of the credit department. Now it is easy to get along with my friends.

Our results were not obtained from the first visit by our consultant. He made a few supervisory visits back, and we were soon on our way.

Let me sum up the results of our big step, which incidentally, we now know was in the right direction. Our delinquency has been reduced from 40 per cent to less than 25 per cent. Our delinquent dollars have been reduced from \$29,160.55 at the start, to \$13,093.11. Our total receivables has dropped from \$71,931.03 to \$41,029.83. We have lost about six customers that can be blamed on our change-over, and four of these accounts that we know were unworthy of more credit. We are much better off without them. Our staff is trained in credit management, and I am not called upon to be the credit manager and take my time away from the many duties of a manager. Our drivers and servicemen know their job and its relation to our credit policy.

A most important part of this program, that cannot be overlooked, is that when we had \$72,000 on our books we were not in as good a position as we are now to carry our old time customers—if they were faced with financial adversity. Being in a position to grant credit to the worthy, grant an old customer an extension of time to pay, and our using our salesmen for sales and service, instead of credit, has gained for us the respect of our customers. We are now in a much better position, financially.

Of course, we still have quite a ways to go to reduce our delinquency down to 15 per cent, which is our goal. We would then be collecting 85 per cent or our receivables each month, and maintaining our cash sales advantage. Many of our slow credit payers have been converted to cash buyers. We told them they would have to pay cash, and by golly, they have. It seems that we have quite a few former credit buyers who are happy to be on a cash basis. Something that we believe almost unheard of.

Let me add this. If we had not taken this step in the right direction, it is certainly understandable that our receivables would have kept on climbing and earning nothing. Our charge-offs would certainly have been greater than they are now, which incidentally, are confined to the few customers who skip from rental property and cannot be located. Their account balances are now controlled. The amount necessary to charge off is very small.

Our customers are like customers everywhere. They want to buy on credit. And we want to sell credit. The \$31,000 represented in our reduction of receivables is now operating capital. With this, we have been able to make some good investments. Among them, we have opened a branch office, and have purchased a competitor's outlet, which is being absorbed into our main plant. We also have a full time salesman that we can now afford.

I believe it is every dealer's duty to progress with the industry. He should grow and expand, which of course, takes money. Take my advice. Look for additional operating capital in your credit department. ■

MARIS WARD • Managing Partner
Ward's Propane Service
Crescent City, Calif.

Motivation theory can sell load building appliances

By W. R. LAWRENCE JR. • President
Phillips & Buttorff Corp.

AN L. P. gas dealer once told me that the nature of his business has doomed him to be broke until that happy day when he could sell out. Each new customer he obtained drained off some more of his ready cash immediately, while the return of that cash would be postponed in a monthly amortization of the customer installation.

LPG dealers do have a ravenous capital investment program in tanks, plumbing, and transportation facilities. This is money that goes out fast but comes back slowly. And the problem becomes more acute the more successful the dealers become.

Thus, the missionary work and acquisition of new customers must be tempered somewhat by conscientious application to business in the sale of additional load building appliances to customers who already have a complete installation.

The question is: "How can we best sell additional load building appliances?" And the answer is not "Keep banging away at your prospects." It is, instead, "Use properly applied motivation."

I was interested in Dr. Ernest Dichter's analyses on motivational impulses which fit our current situation. "I have been going through some of the standard literature on salesmanship. Like a plot of a western movie, most of it follows a classic groove. I can hear the refrain now: Determination is what makes an apparently beaten fighter hang on doggedly to fight *one more round*—and suddenly discover the strength to land the one final punch

that puts his adversary down for the count. The winner never quits—and the quitter never wins."

You can't quarrel with this thesis, of course, it is so trite that any child would indorse it. "I can tell you this though," he said, "if this is the main tool in your sales' kit, you are in for some unhappy surprises. Things are changing—today's buyer is bewildered by our abundance and technical progress. He is afflicted with 'misery-of-choice.' The shadow of a crack has appeared in our hitherto solid wall of confidence in the continuing boom of the American economy. You will notice a growing tendency to postpone buying—to stall, and it is *through motivation* that procrastinating buyers will be moved to action."

Dr. Dichter put a quick label on the forces both conscious and subconscious in human minds by stating that "all basic human motivations boil down to the desire to stay alive as happily as possible." How do you appeal to this desire? There is a past concept of salesmanship today built around the theme of conflict—with the customer and salesman as adversaries. This comes out in the language of sales people as—"Aim for the heart" or "Disarm your prospect".

But pure klobbering today is absurd. Those sales scientists who are currently dissecting the customer find that the modern salesman should base his activity firmly on educational techniques appropriate to the situation where "misery-of-choice" prevails, which simply means that the modern

salesman must be a *problem solving partner*.

The customer does not simply wish to buy something. He wants to solve a problem. Consequently there must be no cause of conflict; instead—one of problem solving partnership. Buyer and salesman focus on a common goal—the fulfillment of the customers' needs.

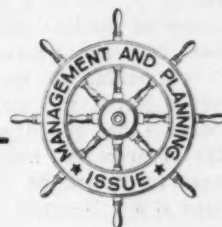
The customer is confused. You must know what you are talking about and how it applies to the customer's problems, so by all means, make use of literature which thoroughly acquaints the customer with a product or service.

The modern salesman must be a teacher. He must help the customer achieve a genuine satisfactory relationship with the product. This means that he anticipates any question the customer will ask and have a satisfactory answer, including how to take care of the product—easily and cheaply.

The modern salesman must be a protector and offer a haven to the insecure buyer. A customer needs to be able to say of him: "I know I can go to John X for advice. He will give me a straight story even if it costs him a sale." The customer needs to be able to tell his troubled friend to get hold of John—"He'll take care of you, he has never let me down yet."

The modern salesman must be personally involved. Buying decisions happen more quickly when

**To sell more LPG appliances,
solve your prospects' problems**





More leisure time is a prime motivation for almost every housewife. She can have it with "set it and forget it" controls.

the customer finds out that the salesman is personally interested in the merchandise he is selling, that he has had experience with it, that he too has been involved in problems of similar nature to those of the customer.

Sometimes a slight change in the manner of approach can mean the difference between a successful sale or none at all. There is a story of the "prosperity" sales appeal of one company in selling their air conditioners. They formerly used the words "You deserve sleeping in comfort." Now that people appear to be adopting the Spartan approach and postpone buying, the company re-stated their appeal as follows: "You can't afford to be tired all day." What was formerly pushed as a luxury, is now called an absolute necessity.

Progress with new products or products unfamiliar to the customer often leaves the customer behind because they may demand a knowledge of processes, materials, and usages for which he has no background at all. Newness is sold

when the salesman shows, through the use of his product or service, that the customer will be able to make some aspect of his life *different* from here on out.

The psychology of pricing today is of the greatest importance. Such psychology has been misinterpreted to the point where it has been extremely costly to the dealers (in appliances particularly). What are the customers' recent attitudes with regard to prices on appliances he buys? Complaints about rising costs are general. Some people subconsciously wish for a recession, hoping that it will bring prices down.

Slashing prices, however, is *not* the inevitable or even the most efficient solution. There are good reasons to believe that if prices did start coming down fast, most consumers would feel that this is only a beginning, and would sit back to await further reductions. The important thing is to give a feeling of stability and confidence through maintenance of prices as indications of true value.

The salesman should anticipate the buyer's possible difficulties. Quite naturally, nobody wants to give the impression that his product is dangerous or in any way unsatisfactory, but it is equally foolhardy to work on the assumption that everything will always turn out all right. It is necessary to explain in correct and concise language the principles involved in the functioning and performance of this product, or process, or safety measure.

It is important to list the typical mistakes most often made, advise your customer, and guard against their occurrence from the very start. Frankness is always best and it is important that you discuss the inevitable small things that can and will go haywire.

Do your best to make the customer proud of his purchase—be it a water heater, a gas range, or a new gas furnace. See that you reap the full benefit of his pride in your product and his willingness to tell his friends about it. By all means, remember the customer by re-establishing contact with him after the first thrill of the new purchase is over. Several simple devices can accomplish this. One of which is to inquire how the new furnace is operating, or to remind him of the expiration of the guarantee on his range so that any adjustment or correction can be accomplished within the period.

All of which leads me to another vital suggestion which, to my way of thinking, is as important as all steps listed before—provide *quality* appliances and give prompt and helpful service in your capacity as a counselor to the customer. There is always a tendency on the part of a dealer, when he thinks he might lose a sale, to suggest an inferior product for price reasons alone. Forgetting as he does so that this folly will come home to roost at a later date through repeated service calls.

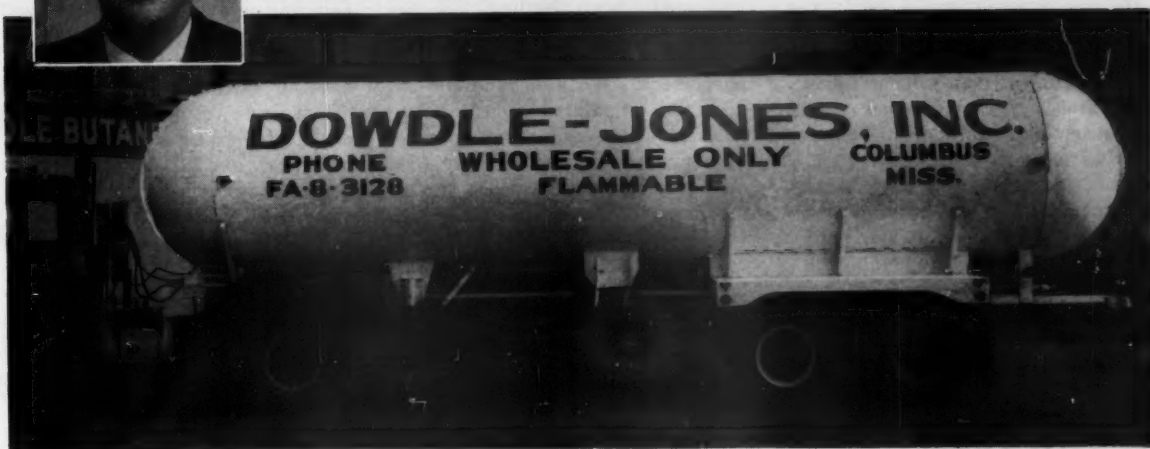
The product must stay sold. L. P. gas dealers' problems with respect to service calls are increasingly costly due to long trips to be made into rural areas, and no dealer with a substantial outlay in tanks and equipment can afford to adopt a "hit-and-run-policy" in the sale of appliances and equipment.

Mississippi Tank T-1 Transport owner says ...



*"We'll add only T-1 units
in the future!"*

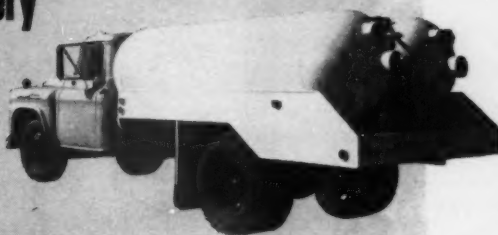
John Dowdle, Secretary-Treasurer
DOWDLE-JONES, INC., Columbus, Miss.



"The outstanding performance of our Mississippi Tank Load-King Transport has convinced us that the way to higher profits is through the use of T-1 steel equipment," says Mr. John Dowdle. "In season, our Mississippi Tank T-1 Transport hauls an average of 175,000 gallons a month from the bulk plant, which is located 350 miles away. The unit is engineered so that we can get maximum payloads in every state where we operate."

"Paymaster" Twin-Delivery

Streamlined and beautiful, this unit is quality-engineered for perfect balance, maximum payloads and long, efficient service. Available with rear cabinets and full skirting in capacities from 1200 to 2300 wgs.



**MISSISSIPPI
TANK COMPANY**

INCORPORATED

Hattiesburg, Miss. Tel. JUniper 3-0262

MISSISSIPPI TANK COMPANY, Hattiesburg, Miss.

—Show me how Mississippi Tank T-1 steel transports can pay for themselves in just a few months.

Also send information on:

- PAYMASTER TWIN DELIVERY
- TITAN T-1 DELIVERY (3,075 WG CAP.)
- BULK AND DOMESTIC STORAGE TANKS

NAME

COMPANY

ADDRESS

CITY and STATE

I am sure many dealers are already using a technique adopted by L. P. gas dealers in parts of Tennessee but it bears repeating: They institute an alliance between themselves and natural gas utilities. Of course, this is a friendly alliance to the extent that when a customer moves from rural L. P. gas home to the city, or vice versa, the losing gas supplier would notify the other so that an immediate call could be made to overcome the electrical competition which follows the first step the customer makes in a new move through his request for turning on the electricity.

Considerable attention must be directed by all of us in an effort to obtain specific and qualified prospects. You know better than anyone else that the dealer who waits for customers to come into his establishment is not only wasting his time but is doomed to extinction. While the term "qualified prospects" has been greatly overworked and is subject to many di-

vergent definitions, the simplest description of a qualified prospect is that individual who has the need, who has the money, and who can be motivated to action. His decision to buy your product will be determined by how earnestly you can convince him that your appliances should be No. 1 on his purchase priority list rather than somewhere down the line.

In both city and rural areas we come upon a typical American phenomena. We see hundreds of decrepit, unpainted shacks and houses practically falling apart—but on each we find a shiny \$75 T.V. antenna, a late model automobile parked in front, and a new washing machine on the back porch. None of these items contributing to the *fundamental* processes of staying alive, but as I said before, helping to stay alive "happily." In the kitchen will be a burned out coal and wood stove or a greasy range 15 years old.

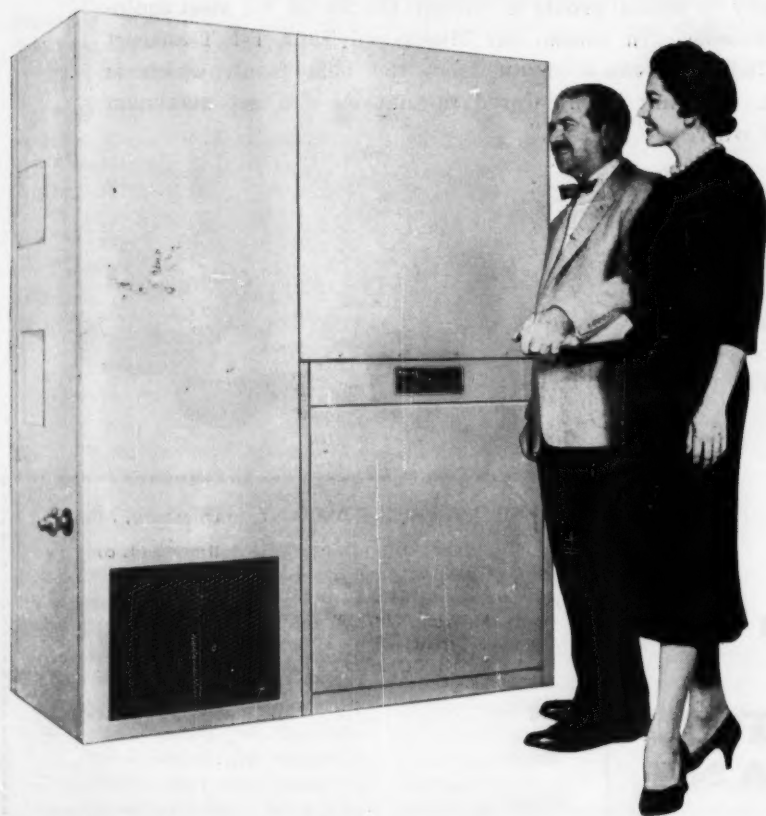
We find the same situation in

the better homes—the same old ranges in the kitchens where the neighbors can't see them. It is hard for me to believe that there is not a deep-seated desire on the part of the housekeeper for a better automatic range to relieve her many hours spent in the kitchen. It's up to you fellows to get there with your product ahead of the new car and television salesmen! Sure, the husband thinks the old range "good enough"—he doesn't have to slave over it.

Our own company has spent more sales executives' time in the past year on the subject of competent prospecting than on almost any other effort. Our motivation was the fact that the biggest and most successful businesses today have been built by going *after* the prospect rather than hoping the prospect will come to them. The astounding success of the life insurance companies will attest to that!

I should like to comment on the fine job many segments of the LPG industry are doing in the battle against Government competition in business, and with your particular target—the REA. I should like to add a word of caution, however, and perhaps some brutal realism, for, in your monumental task ahead, you will find it very difficult to get anywhere by appealing to the public's sense of fairness on the issues involved. You must find out the public's *selfish* interest and work on it toward the desired end.

It is obvious that, while *your* serious problem is the existing tactics of the REA, there are also more than 2000 other businesses in which the Government is engaged in direct competition with private enterprises. Cooperate and enlist the support of all because the job ahead is too great for small groups. Remember that the farmer does not particularly care whether *your* industry survives or not, and he can quickly get the mistaken idea that you are trying to do him out of his electric power. There are more farmers than L. P. gas dealers and nobody fights with Santa Claus! Talk to him about *his* interests in combating Government competition on issues *affecting him* and he will help you on your problem. ■



Pride of ownership is powerful motivation for Mr. and Mrs. Homeowner. And they can be justly proud of an all-year air conditioning system for their home.

Announcing Honeywell's new WATER HEATER CONTROLS



The world's finest
Water Heater Controls
are now even finer . . .

Here's why:

- ★ **Pressure regulator built right into control**—properly located in gas stream. Models available without pressure regulator.
- ★ **Safe lighting interlock** prevents accidental turning of gas cock to *off* position once it has been put in *pilot* position. And pilot can only be cocked in pilot position of knob.
- ★ **Universal Duofilt filter**—the same filter resists clogging by both dust and gum, works on all gases. Included at no extra cost. AGA listed.
- ★ **Top setting** of both temperature and gas cock gives greater convenience, eliminates stooping and squatting.



Deluxe model, V5131. Available with long or short element or tube—with or without pressure regulator.

Honeywell



First in Control



In Water Heater Controls—you have more to sell when you sell Honeywell

Turn
Page

No stoop—
no squat—
because the
settings
are on
top



**Honeywell's new line
of Water Heater Controls are
made to sell easier,
sell more!**

Now you can offer water heater controls that are not only strikingly handsome, but also offer the latest improved features, such as built-in pressure regulator—plus greater convenience and ease of adjustment.

Honeywell's all new Water Heater Control line is available at no increase in price.* Get complete information by calling your local Honeywell office. Or write Honeywell, Dept. 80, Minneapolis 8, Minnesota.

*Slight additional charge for models featuring built-in pressure regulator.

Standard model, Y5130. Available with long or short element or tube, with or without pressure regulator.

Honeywell



First in Control



**In Water Heater
Controls—you
have more to sell
when you sell
Honeywell**



The entire accounts receivable file of this Austin, Texas, LPG dealership is maintained compactly in this Kardex cabinet. Visible edges show name, address, and credit status of every customer.

Accounts receivable system gives Spiller Butane double mileage

THE Spiller Butane Co., Austin, Texas, has been getting double mileage out of a new accounts receivable system. The system is increasing sales and at the same time keeping closer control over company operations.

Spiller Butane has been serving the Austin area for more than 20 years. Roland W. Daily, owner, reports that the bulk of the company's service today is within a 35-mile radius of the city, taking in both rural and city customers beyond the natural gas line. About 15 per cent of its L.P. gas deliveries go to industrial accounts—for gravel rock crushers and ready-mix concrete trucks, and for agricultural uses such as heating hog feed according to a state law and providing heat for brooder houses.

Primarily, Spiller's products are directed toward residential customers, and it is in reference to these that its visible accounts receivable system is providing valuable assistance in the sales program.

The new system works this way: when customer delivery is made,

the driver fills out an invoice in his book. The customer gets a carbon of the invoice, the driver keeps the original, and a tissue carbon remains in the book. When the driver checks in to the office, the original is edited and balanced against the cash or charges turned in. The invoice book, when it is used up, is kept as a control.

The accounts receivable file is set up in Remington Rand Kardex units. These are visible records which show the account's name and address at a glance. The visible Kardex pockets, assigned one to each customer, expedite location of a particular account for posting. If the customer is Elmo James, the clerk simply pulls out the slide



Spiller Butane Co. owner Roland W. Daily reports increased sales and better control thanks to his new accounts receivable system.

of the Kardex cabinet in which the "J's" are located. Then, quickly scanning the visible edges of the pockets, she locates Elmo James and double checks by comparing the address on the visible edge with the one on the invoice. To post, she has only to lay back the cards at that point.

There are actually two records assigned to each account: a top card for details, and a bottom card for accounts receivable information. The bottom card has columns for recording date of purchase, ticket number, gallons purchased, debit, and the balance. Entering this information is, in effect, the debit posting.

When payment is made, the date, ticket number, credit and balance are posted on the next line. The final entry always lists the balance, and provides a ready record for

preparation of monthly statements.

In the visible margin at the bottom of the pocket is a movable Graph-A-Matic signal which can be adjusted over one of four settings: inactive, cash, credit, or past due. By moving the signal over the correct setting at the time of posting, it is possible to tell just by looking over an entire slide of accounts the status of any particular one, or get a general picture of the entire accounts receivable file.

The upper card carries detailed credit, sales and statistical information. When an account is opened, the following information is listed: name, address, employer, credit references and standings, tank size and type of gas used, the delivery man's name and route number, and the types and brands of appliances used.

This detail card also has space for an eight-year monthly gas consumption record. Whenever the card is posted, the clerk enters the monthly total of gallons used in the upper card. In the event the customer has made a purchase of a new gas appliance, the delivery man notes it on the ticket and this too is entered on the detail card. Thus, there is a visible comparison record covering a period of eight years, showing gas purchases and appliances owned by the customer.

If gas sales to that customer should drop, the fact will show up immediately on the card, and the Spiller salesman can follow up on it. By the same token, if the customer is using a gas refrigerator, hot water heater, and heating unit but no gas range, the salesman will know he has a logical prospect for a gas range.

The detail card has proved most successful in Spiller's selling program, and also as a means of closer control over the company's operations. Through the monthly gas record, for example, Spiller can eliminate or adjust deliveries that are a drain on service. If a customer's detail card indicates an average monthly gas use of 195 gal., but his tank size is only 150 gal. the delivery man will often make deliveries more than once a month. The cost of delivery becomes needlessly high, especially if the customer is situated in an out-of-the-way place. With the Kardex system, Spiller can spot such accounts and install a greater capacity tank.

The Kardex equipment in use provides ample room for expansion. Setting up new accounts is a simple process, with detail and accounts receivable cards easily inserted in the Kardex pockets.

In total, the new system is providing Spiller with five major advantages: accounts receivable and credit information quickly and easily available through the visible margins; sales statistics keyed to a sales program, providing salesmen with all the information necessary to do their job; flexibility for expansion of services; the status of each account immediately visible through the Graph-A-Matic signal; and both accounts receivable and detail information at finger-tip control.

JACKSON, Harold		MONTHLY GAS RECORD	
121 Elm Grove		JAN	60 70
DELIVERED BY: <i>James L. Spiller Co</i>		FEB	100 90
DATE OF ORDER: <i>6-6-56</i>		MAR	55 90
GAS USED IN: <i>125 100</i>		APR	90
CREDIT: <i>125</i>		MAY	80
TANK SIZE: <i>150</i>		JUN	100
TANK TYPE: <i>Rad</i>		JUL	
APPLIANCES: <i>Refrigerator 30 gal. 4-11-56</i>		AUG	
HOT WATER HEATER: <i>Refrigerator 30 gal. 4-11-56</i>		SEP	65
RANGE: <i>Refrigerator 30 gal. 4-11-56</i>		OCT	125
REFRIGERATOR: <i>Refrigerator 30 gal. 4-11-56</i>		NOV	125
HEATING UNIT: <i>Refrigerator 30 gal. 4-11-56</i>		DEC	110
OTHER: <i>Refrigerator 30 gal. 4-11-56</i>		TOTAL	1035

DATE	TICKET NO.	DESCRIPTION	GALLONS	DEBIT	CREDIT	BALANCE
10-5-56	18653		125	16.25		16.25
11-9-56	6103				16.25	-0-
11-15-56	19454		125	17.50		17.50
12-5-56	6154				17.50	-0-
12-26-56	20681		110	15.40		15.40
1-5-57	21071		90	12.60		12.60
1-11-57	7156				28.00	-0-
1-30-57	21865		70	9.80		9.80
2-6-57	7207				9.80	-0-
2-8-57	22961		90	12.60		12.60
2-28-57	23710		100	14.00		26.60

A look inside the Kardex file shows that each customer actually has two cards. Top card gives detailed information for sales analysis and follow up. Bottom card carries account status.



a
promotion
plan with
IMPACT
for Sinclair
TRUFLAME
distributors!



The new 50/50 Advertising Plan for Sinclair distributors has gained immediate and enthusiastic acceptance. This selling tool is already working for distributors throughout the country.

Join forces with a company already recognized for "The Famous Five" INTEGRITY, REPUTATION, QUALITY, SERVICE and PERFORMANCE. Wire, write or telephone for complete information today.

The TRUFLAME 50/50 advertising is being seen by thousands. Its impact is being felt by distributors whose cash registers are ringing up additional sales. Consumers are identifying the TRUFLAME emblem as a sign of the highest quality and service.

If you need the support of a company that can assure you of an adequate supply of product, professional engineering, on time delivery . . . plus the prestige of a nationally advertised trade name, call Sinclair.



Sinclair Oil and Gas Company
Liquefied Petroleum Gas Sales Department
Sinclair Oil Building, Tulsa, Oklahoma

SINCLAIR
A Great Name in Oil

Schmitz attracts attention

By KEN KIRKPATRICK



This 900 gal. LPG tank, which revolves at 10 rpm atop the Schmitz Appliance Co. building, has been an effective advertising sign for owner Carl Schmitz.

LPG dealer Carl Schmitz, Lamar, Mo., makes sure that people notice his business place in the heart of town. Schmitz easily attracts the attention of visitors to Lamar's business district with a rotating, 900-gal. LPG tank mounted atop the Schmitz Appli-

ance Co.'s two-story building.

Wording on the sign was kept brief so that people could read the entire message easily as the tank revolves. Painted on both sides of the tank are the two words "Schmitz Propane."

The specially-constructed, 850 lb

tank turns at a constant 10 rpm. It is now powered by a 1/6 hp motor, but it can be turned by 1/70 hp motor.

A support made of two automobile frames welded together supports the weight of the tank. The turning mechanism is the hub of a truck wheel. The automobile frame support places the weight of the tank on building walls rather than on the roof. The entire assembly weighs 1100 lb.

Lights illuminate the sign at night. Automatic controls turn the lights on at 7 p.m. and off at 12 p.m.

The shell of the tank is of light metal, but the heads are real. The dome is simply a cover. The entire cost of the revolving tank sign was about \$400.

Mr. Schmitz is capitalizing on the novelty of his ingenious advertising sign by building additional small signs to be mounted on fence posts beside major roads into Lamar. These small units will be mounted on truck hubs also, and they will be powered by a windmill-like set of vanes welded to the truck rim. Schmitz plans to follow this idea further by painting a tank design on his delivery trucks so that the familiar tanks reading "Schmitz Propane" can be seen as his trucks travel in and around Lamar. ■

Mr. Schmitz is having several miniature tanks like this built to mount on fence posts near roads entering Lamar, Mo. The tanks are turned by the wind.



They laughed at the first tank...



nothing will replace the bottle



...but how wrong can you be...

THE MODERN MASTER PROPANE TANK

Manufactured by THE OLDEST PROPANE TANK MANUFACTURING PLANT IN THE WORLD



Back in the 30's they laughed at "those daffy looking tanks." That was when the first Master domestic tanks made their appearance. From the start they were a success, despite the men who thought bottle delivery was the only way. The domestic tank started a new, practical, economical way to deliver gas that built volume . . . simplified dispensing. Master Tank & Welding, believed to be the oldest manufacturer, who is still in business, of domestic propane tanks in the world, will continue to produce **THE FINEST TANK MONEY CAN BUY.**

SOLD from QUINCY, ILLINOIS or DALLAS, TEXAS



MASTERPIECES OF
STEEL FABRICATION



2000 S. Front St. • Quincy, Illinois • Baldwin 3-5014
P. O. Box 5146 • Dallas, Texas • Riverside 7-2441

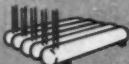
Order your storage and transports from the Master plant nearest you. Shipments made by truck, railroad or low cost river barge.



TRANSPORTS



TANK TRUCKS



STORAGE



DOMESTIC



FILLING STATIONS



FARM CARTS

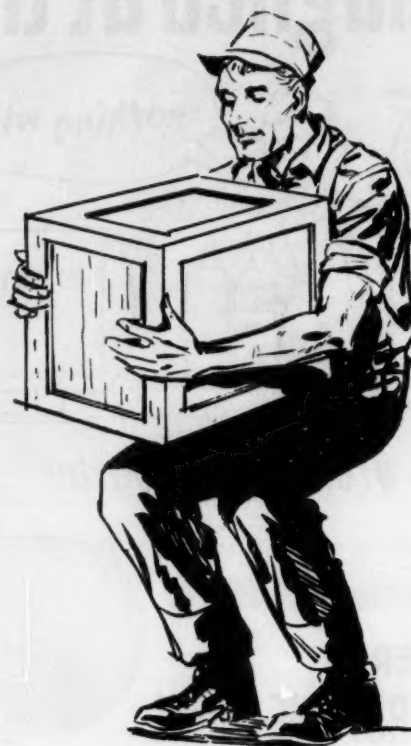


REFINERY



LINE PIPE

How to work without straining



WHETHER you've suffered from a pulled muscle, sprain, Charley horse or a backache, chances are you could have prevented it. Over 250 thousand workers — and who knows the thousands of housewives and white-

collar people—injure their muscles through bad work methods each year.

Translated into time lost from work, such aches and pains cost the nation dear. And in terms of personal anguish, only the common

cold causes more general discomfort.

Anybody who has ever suffered a sprained ankle knows how much pain can come from a ligament stretched too far. Anybody who has suffered from a Charley horse knows the pain of a muscle spasm. Anybody who has cracked his funny bone knows how pain radiates along a squeezed nerve.

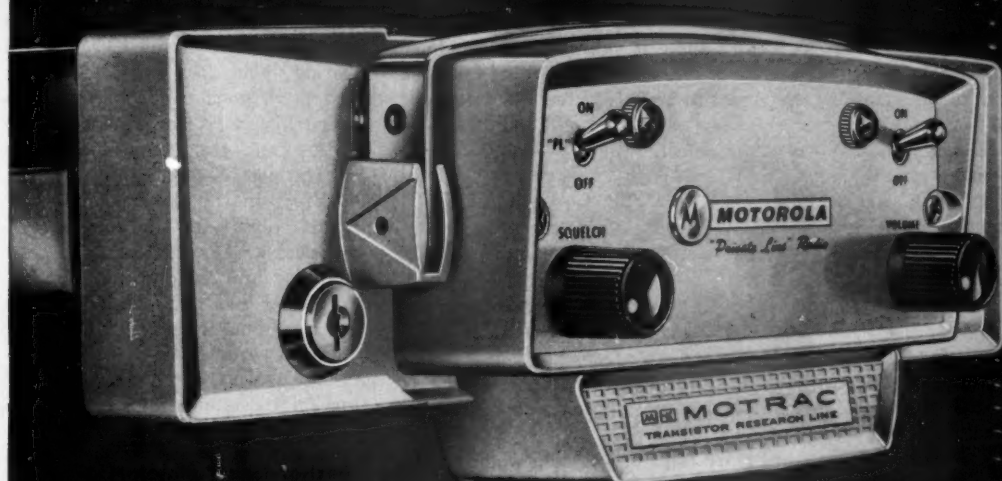
No laughing matter. Yet our choice up to now has been to grin and bear it. Most of the \$70 million spent each year on external pain killers has been invested in a vain offering to the aching back.

Like the cold, everybody talks about pain, but no one is quite certain precisely what it is, where it is real and where only psychically apparent. They do agree, at least, that it involves stimulation of the nerve which causes a contraction of the surrounding muscle tissue and blood vessels, thereby impeding circulation. A vicious circle. Such impeded circulation increases pain and contraction. While we may

Follow these four simple rules, and you'll find yourself working—and playing—without strain.

1. Use your strong leg and arm muscles when you lift—not your back. It has enough to do just supporting you and allowing you to bend.
2. Gear your activity to your age and physical condition. Physical effort, in moderation, is an excellent body builder, but don't carry it to excess. Stop and rest when you feel the danger signals of fatigue.
3. Build up your muscles—but in easy stages. And don't just concentrate on your biceps; get as many of your muscles as you can into the act.
4. Change your working position as often as you can. If your job is a sedentary and stationary one, watch your posture. Periodically rest the set of muscles in constant use; don't let yourself tense.

MOTRAC*



Lower Battery Drain—No need now for heavy duty batteries and generators. Current drain on "stand-by" is 1/3 that of tube-type receivers, 1/15 with battery saver switch.

Greater Reliability—Transistors, printed circuits and new design all greatly increase reliability.

Smaller, Lighter—Approximately 1/2 the weight, 1/3 the size of other models. Mounting in tight quarters easier than ever.

Completely transistorized receiver and power supply... Another Motorola First!

Here is 2-way radio with efficiency and reliability never before approached in mobile radio. No more tubes in the receiver —no more vibrators in the power supply . . . all are replaced by long life, dependable transistors. No longer is it necessary to idle the vehicle to keep the radio operating. Savings in gasoline, engine wear and batteries add up fast. Let us prove to you how MOTRAC radio will cut your radio operating costs . . . while giving you reliability never before possible. Write today.

MOTOROLA 2-WAY RADIO

Motorola Communications & Electronics, Inc. • A Subsidiary of Motorola Inc., 4501 Augusta Blvd., Chicago 51, Ill.
MOTRAC is a trademark of Motorola Inc.

How to work without straining . . . The best medicine is a dose of prevention

take Hippocrates' "He who allays pain, heals" with a grain of salt, it is certain that relief of pain can introduce the healing process by relaxing the nerve and allowing the tissues to repair themselves. Primarily, of course, pain serves as a signal to alert us when tissue is damaged.

The best medicine is a dose of

prevention since we bring most muscular aches and pains on ourselves, both on and off the job.

It's simple enough. Just think a moment about the way you are constructed. Your support and your movement are controlled by your skeleton which is composed of bones and strong bands, called ligaments, that hold the body together

at the joints. Extensively distributed over the skeleton to provide power for movement and to give form and substance to the extremities are the muscles. They are attached to the bones with strong fibrous bands, tendons. This complex structure is given direction and set into motion by the nervous system. A magnificent creation, supple and strong.

It can be trained to run a mile in four minutes, lift weights as heavy as 800 lb., jump higher than itself, and other extraordinary things.

But, oh, how we abuse it! We use our muscles — very often the wrong ones — when we should be using our brains. We let our muscles get out of condition, and then suddenly put them to strenuous use. The sedentary worker, who is not usually in shape, likes nothing better than a strenuous two week vacation. While the manual worker, who does a lot of lifting and is in good condition, likes to spend his spare time as motionless as he can. His aching back, the day he gets back on the job! We sit erect in the same position for hours, torturing our lower back muscles which must support the whole weight of our upper torso. We allow one set of muscles to grow fatigued from weariness and another weak from lack of exercise. Yet we think nothing of calling on these undeveloped muscles to exert tremendous effort at a moment's notice.

We defy gravity simply by standing on our hind legs. Our back muscles have to work hard as long as we are awake just to hold us up. And the housewife who picks up a sack of sugar or the stenographer who lifts a typewriter subjects the muscles in her back to tensions of a half ton or more.

Most common source of muscular aches and pains are poor lifting methods. In fact, one work injury out of four results from poor handling of materials. Just consider: When you straighten up from a bent over position, the strain on the muscles, vertebrae, ligaments and discs in your back can amount to more than a quarter of a ton. If you lift with your back at the same time, the weight of the object is multiplied by 15 times or more. ■

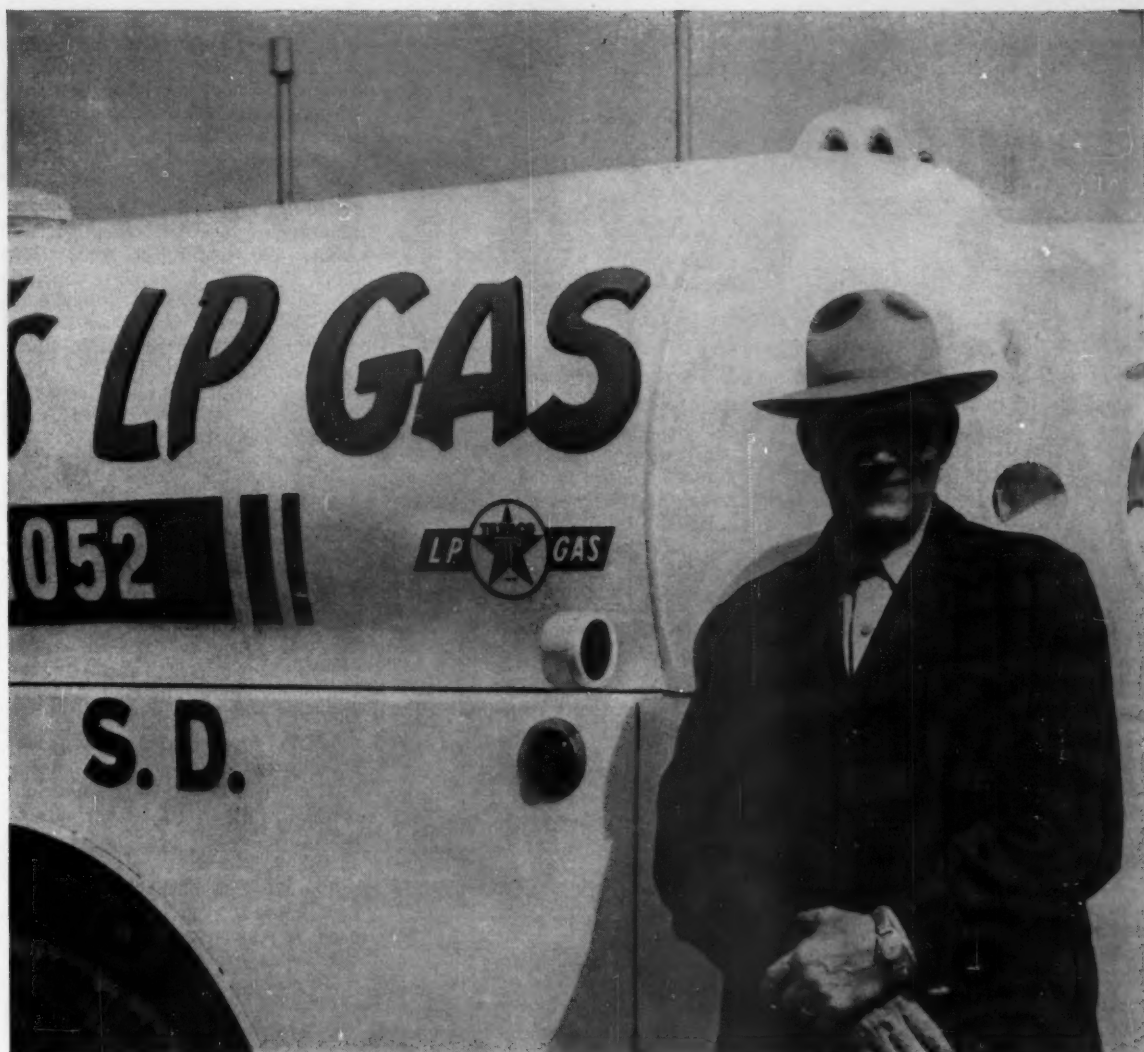
Do's and don'ts for working without strain

DO

1. Inspect load to make sure you can handle it yourself and decide the best way to grasp it.
2. Get a firm footing close to the object to be lifted; feet the length of a shoe apart for balance.
3. Bend knees and crouch down to the object.
4. Keep the back almost vertical and feet apart.
5. Get a good grip.
6. Straighten knees slowly, rise, keeping load close to the body and directly over feet.
7. Lower load just like you lifted it.
8. Lift the load waist high and rest it on a support to get a better grip before raising it shoulder height. Bend the knees to give added power for the final lift.
9. Rest frequently when carrying load for a long time. A tired person is more subject to strain, sprain, tripping and loss of balance.
10. Stop, reduce the load by making more trips or get help when you feel strain or pull.
11. Grasp sacked material by diagonal corners and swing to one shoulder with a boost from the knee.
12. Take care of muscular aches and pains immediately. Rest the muscle.

DON'T

1. Be a show-off. Do get help when you need it, or use a dolly, lift truck or conveyor.
2. Use quick, jerking movements. They may cause injury by putting sudden strain on the muscles.
3. Carry a load for long periods of time without frequent stops for rest.
4. Carry load balanced on the hips. The body must be bent to one side, thrown off balance. One arm gets all the strain.
5. Lift with your legs straight, back bent.
6. Move object directly from floor to shoulder height without intermediate rest stop.
7. Twist around. Do get the load up and shift your feet to turn your body.



"FARMERS WANT DEPENDABLE SUPPLY, AND TEXACO HAS NEVER LET US DOWN"

"I've been in the LP-Gas business since 1946, and my Texaco contract is the finest I've ever had," says A. J. "Bud" Mueller of Farmer's LP-Gas Service, Estelline and Brookings, South Dakota.

"The Texaco people have a helpful understanding of my problems, and help me iron them out. Also, we've always had dependable, on-time deliveries, which are mighty important to us and our customers. Texaco LP-Gas is a superior

product, too, and has won complete acceptance here."

5 reasons why it pays to be a Texaco LP-Gas Distributor

1. A product of highest quality — moisture-free.
2. Dependable and efficient delivery, in a new fleet of tank cars, from 25 strategically located production areas.
3. Immediate acceptance. Texaco LP-

Gas is sold under the nationally-known, famous trade-mark, the Texaco red star with the green "T."

4. One of the largest producers of LP-Gas, The Texas Company is the only petroleum company to build up successful distribution of its products in all 48 states.
5. Profitable and proved sales policies. Texaco does not compete with its independent distributors of LP-Gas.



Team your name with Texaco and profit. Some areas are still open for a sound and profitable business with Texaco LP-Gas. Let us tell you how. Call or write today . . . The Texas Company, LPG Sales Division, P.O. Box 2420, Philtower Bldg., Tulsa, Okla., Diamond 3-4101; 3350 Wilshire Blvd., Los Angeles 5, Cal., DUnkirk 5-0515.



news

National Propane acquires Arrow Gas and subsidiaries

The acquisition by National Propane Corp. of the assets of Arrow Gas Corp. and subsidiary companies of New Mexico, Texas and Utah, was jointly announced recently by H. N. Forman, president of National Propane and Robert O. Anderson, president of Malco Refineries Inc., the majority stockholder of Arrow.

In Arrow's last full fiscal year the company had revenues in excess of \$5 million and sold some 60 million gal. of L. P. gas, of which one-third was at retail and two-thirds represented wholesale volume. National Propane's approximate total revenues are presently \$14 million and its gallonage is approximately 55 million.

National Propane indicated that the purchase of Arrow would be accomplished without the sale or issuance of equity securities by National.

Arrow's present management will continue to operate the business. The management is headed by O. L. Garretson, executive vice president and general manager.

Pyrofax Gas creates new sales-training post

W. A. Sanford, manager of the Pyrofax Gas Corp. New England division, has been appointed to the newly created position of manager-field sales training. At the same time it was announced that D. F. Hynes had been appointed to succeed Mr. Sanford as New England division manager.

In his new post, Mr. Sanford will be responsible for preparing and executing both new and tested sales methods designed to improve the efficiency of the techniques used in the selling of "Pyrofax" gas and appliances. He will also be responsible for supervising the sales training of Pyrofax Gas Corp. field and distributor personnel.

William T. Harper named BPN's eastern editor

William T. Harper of Philadelphia has been named the new eastern editor of GAS and BUTANE-PROPANE News, succeeding William Clark, who was recently promoted to the editorship of BPN.

Mr. Harper is a former news-



W. T. Harper

paperman, having spent 14 years on the staff of the *Philadelphia Inquirer*, the city's morning newspaper. He holds a bachelor of science degree in communications from Temple University in Philadelphia.

Mr. Harper, a native Philadelphian, is married and has five children.

AGA's Gas Appliance Service Manual expanded

Two new sets of covers offered with the latest supplement to the AGA's Gas Appliance Service Manual permit subscribers to divide the reference book into three loose-leaf volumes on the servicing of water heaters and incinerators, clothes dryers and ranges.

With publication of the supplement, the manual has been expanded from its original 400 pages to 750 pages. Instructions are included for servicing both new and non-current gas appliances and controls.

The new supplement enables ser-

vicemen to divide the manual into a dryer section covering 19 makes of dryers and their controls, a range section on servicing 32 makes of ranges and controls, and a water heater and incinerator section covering 28 makes.

A descriptive folder with price schedules and order form is available from the Utilization Bureau, AGA, 420 Lexington Ave., New York 17, N. Y. Subscription prices for the nine issues of supplement service range from \$3.75 for a single set to \$2.25 per set in quantities of more than 100. The price of the basic manual also is \$3.75 for a single copy or \$2.50 in quantities of more than 100.

LPGA's new statistic book now available to industry

The L. P. gas industry's production, transportation and sales statistics have been brought up to date in the newly released edition of Market Facts, issued by the Liquefied Petroleum Gas Association.

Market Facts charts many phases of industry development from the 1930's, when L. P. gas became commercially important. Other sets of data are shown for a five year (1952-57) period.

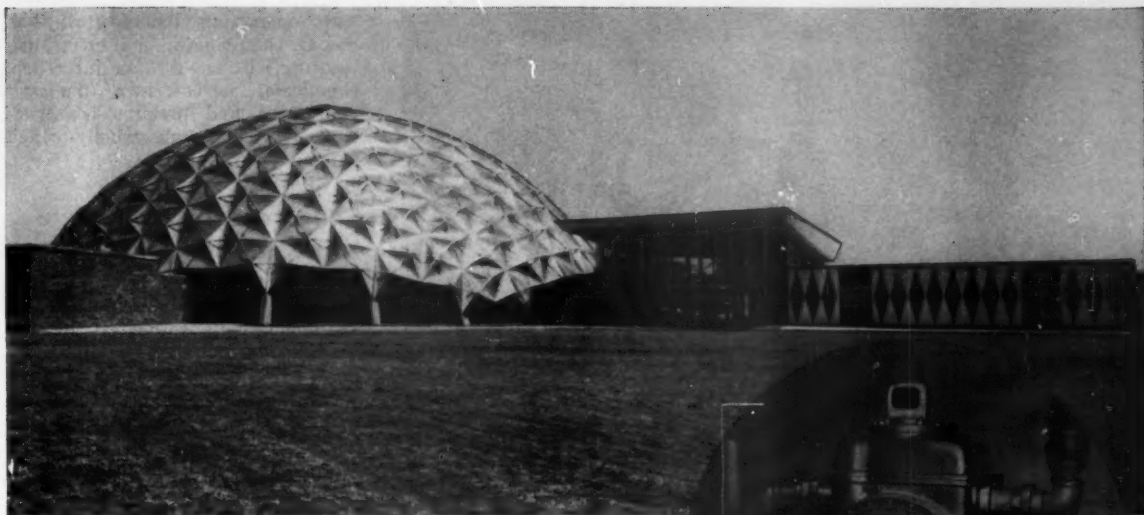
The 24-page booklet uses tables and charts to portray sales by end-uses, methods of transportation, shipments of key items such as tanks and regulators, and sales of appliances. Market Facts is prepared by LPGA's market research committee, of which C. J. Bender, Trinity Steel Co., Dallas, is chairman. Marvin M. Romanek is the staff market analyst.

Copies of Market Facts may be obtained from LPGA, 11 S. LaSalle St., Chicago 3, Ill. Price: \$1.50.

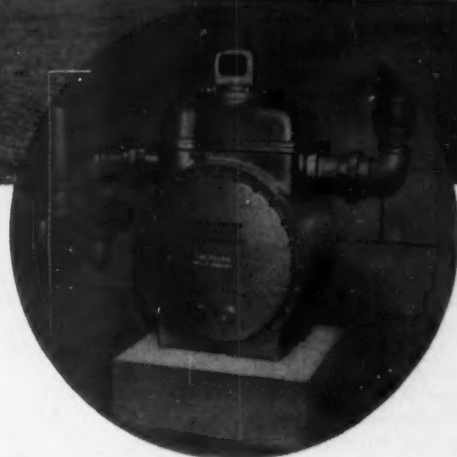
Tables turned on Mark Anton at company party

As Mark Anton, president of Suburban Propane Gas Corp., prepared to award inscribed watches to four employees who had completed 25 years of service with the company, he found himself being called to the podium for a surprise presentation. The board of directors at a special meeting held in his absence had passed a resolution to present Mr. Anton with a testimonial of their appreciation.

Mr. Anton was founder of Suburban Propane, one of the first L. P. gas companies to be established;



Handsome new Convention Hall at Virginia Beach is heated and air-conditioned with LP-Gas. American 80B Ironcase Meter, with Reliance type HPH Regulator, measures the gas that keeps conventions and large meetings comfortable all year 'round. LP-Gas cooking facilities are also being installed in the municipally-built hall.



AMERICAN' LP-GAS METERS BUILD LOADS FOR...



Using the most up-to-date LP-Gas distribution methods, progressive Virginia Beach Gas Corporation brings its customers completely convenient gas service. Virginia Beach Gas Corp. serves the city of Virginia Beach. Its sister company, Beach Gas Corporation, distributes bottled gas to the suburban area near Virginia Beach. Together, the two companies serve 2500 customers — all residential or commercial.

Virginia Beach Gas Corporation's customers have rewarded the company's superior service by continually increasing their loads, helping the company grow and prosper.

AMERICAN[®]
METER COMPANY
INCORPORATED ESTABLISHED 1924



Attractive, lightweight Aluminumcase Meters bring "city-type" gas service to Virginia Beach, Virginia. AL-110 meters build customer confidence throughout Virginia Beach Gas Company's 26 miles of distribution lines within the city. The company distributes about 800,000 gallons of propane each year through underground gas mains.

GENERAL SALES OFFICE: Philadelphia 16, Penna. • Albany • Alhambra • Atlanta • Baltimore • Birmingham • Boston • Chicago • Dallas • Denver • Erie • Houston • Kansas City • Los Angeles • Minneapolis • New York • Omaha • Pittsburgh • San Francisco • Seattle • Tulsa • Wynnewood
IN CANADA: Canadian Meter Company, Ltd., Milton, Ontario • Calgary • Edmonton • Regina

SUPPLIERS TO THE GAS INDUSTRY for Ironcase, Tinned Steelcase, Aluminumcase, and Welded Steelcase Meters • American-Westcott Orifice Meters • Instruments • Reliance Regulators Apparatus • Valves



Mark Anton, president of Suburban Propane Gas Corp. (center), receives recognition for 30-year-old company. In addition to testimonial resolution of board of directors presented by board member, Sylvester C. Smith, Jr. (left), he received "the shoe string on which he started" and "the boots into which it has grown." Handing Mr. Anton the boots is Joseph Lurker, third employee of the company (preceded only by his father and one brother). Mrs. Anton beams as Mr. Anton discloses sincere surprise and pleasure at the honor bestowed on him.

one of the two founders and the first president of the LPGA in 1931; and the recipient of the first Distinguished Service Award.

The board also gave Eugene Howick, administrative vice president, a testimonial document expressing its "appreciation and thanks for his many years of service to the corporation and to the L. P. gas industry."

Employees who were honored for their 25 years of service were Mrs. Ruth Swenson Neville, director of district offices; Louis A. Katz, assistant to the administrative vice president; George R. Williams analyst, and Edward L. Peter, member of the firm's maintenance-engineering staff. Their enrollment raises membership in the Quarter Century Club to 48. Mrs. Neville is the first woman so honored in the company's 30 year history.

Arkla Gas Co. acquires Reynolds Gas Regulator

Arkansas Louisiana Gas Co. recently announced the purchase of Reynolds Gas Regulator Co., of

Anderson, Ind. Purchase price for the company "in its entirety, was \$1 million," the announcement by the gas company's board of directors said.

The announcement said also that the acquisition would lead to the establishment of a factory employing 100 persons within a year in Arkansas.

Reynolds is a leading producer of regulators and gas control devices for utilities and LPG industries. Established 38 years ago, the company manufactures all types of gas regulators.

W. R. Stephens, Little Rock, Ark., board chairman and president of Arkansas Louisiana, said, "I am authorized by the board of directors to announce that Floyd Gaunt, of Anderson, a vice president of Reynolds, will continue in the same capacity and act as general manager of this manufacturing outlet.

"The board has determined that the Anderson factory will continue its operations and that a new and modern factory producing the same products will be established in Arkansas."

Mr. Stephens said that as presently contemplated by the ALG board, the new factory will be of sufficient specifications to provide manufacturing facilities for other gas burning appliances and regulating devices.

While operating details for the Reynolds company have not finally been determined, Mr. Stephens stated, it probably would be a division of Arkla Air Conditioning Corp., a wholly owned subsidiary of Arkansas Louisiana Gas Co.

Arkansas Louisiana began its diversification program 18 months ago and activities added to its bus-

iness operations include: all-year gas air conditioning equipment, gas lighting, cement manufacture, chemicals, horse-drawn buggy equipment and pipeline construction — all through wholly-owned subsidiary companies.

Philco enters the mobile home industry market

Philco Corp. recently announced its decision to put its experience in the home appliance field at the service of the mobile home industry.

A special department has been established to handle this activity, headed by John L. Utz, general manager of special market planning. Working with him is Robert C. Digges, manager of special sales, who will be responsible for sales of Philco products to mobile home manufacturers. Continuing emphasis will be placed on working with the Mobile Home Manufacturers and Dealer Associations to help foster the growth of the industry.

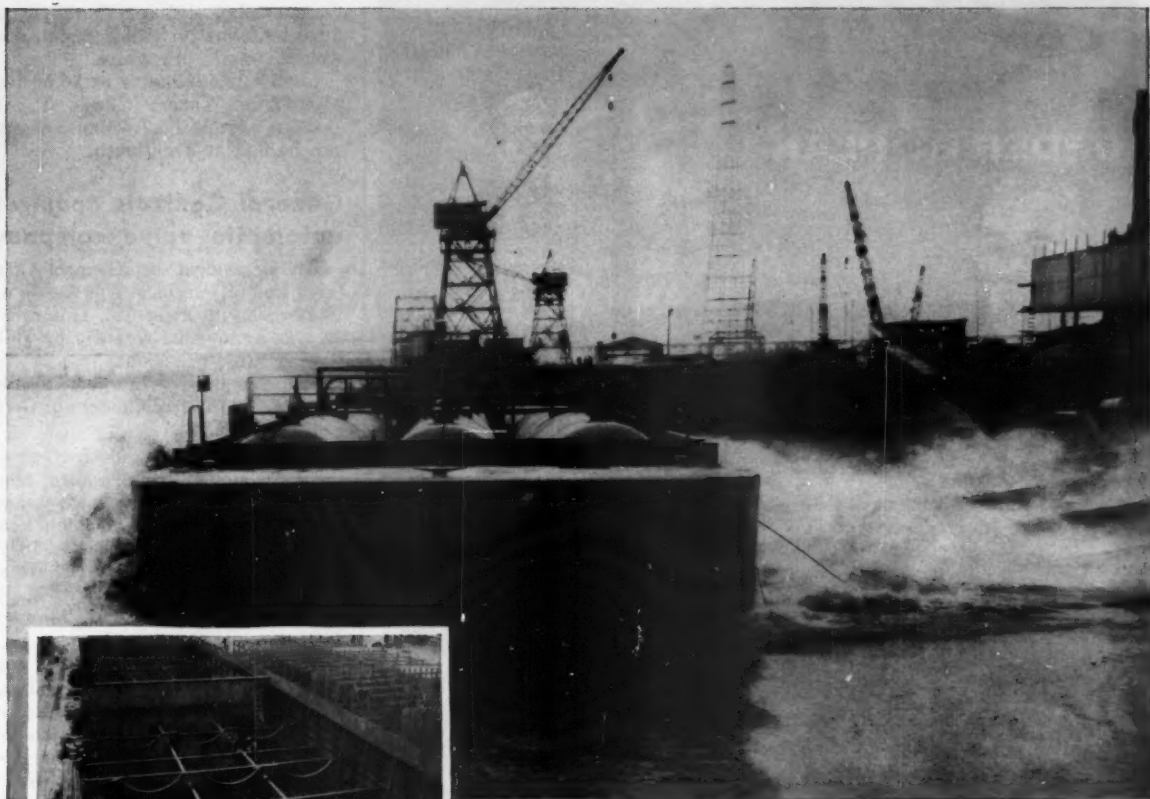
Top Philco officials expressed the conviction that the company's full line of home appliances is tailor-made for the mobile home manufacturer and the mobile home owner. The present line features the Duomatic washer-dryer, the split-level oven and the new "predicta" television receivers.

All Philco products installed in mobile homes will be protected by the same arrangements for free labor and warranty parts replacement during the warranty period as those covering Philco products in stationary homes.

Simplified pressure vessel code is now available

The latest edition of "The Unfired Pressure Vessel Code Simplified" by Robert Chuse is a simplified analysis of the ASME Unfired Pressure Vessel Code. It makes the Code easy to use.

The 1958 edition contains, in its 48 pages, simplified charts for internal and external pressure, shell thickness, flanged and dished head thickness, flat head thickness, flat cover plate thickness and openings and reinforcements. It also includes new charts on external pressure on heads, stamping, head and shell volumes, welding qualification positions, new information on magnetic particle and penetrating oil tests, plate identification, non identified material, articles on Canadian pressure vessel requirements, the



Saddle Arrangement above was used to support barge's huge tanks, shown during installation below. Walls of each tank are over an inch thick. Each weld had to be X-rayed and the entire tank was run through an annealing furnace for stress relieving under intense heat.



Cities Service launches great new LP-Gas river barge

Another reason why Cities Service LP-Gas delivery is tops throughout the Midwest!

With a capacity of 10,000 barrels of LP-Gas, Cities Service No. 1, the great new river barge shown above, marks a giant step forward in LP-Gas progress.

Certified by the Coast Guard to navigate the waters of the Mississippi, its tributaries, and even Lake Michigan, the new barge is another assurance of continuous supply and speedy delivery to Cities Service distributors.

In addition to superior delivery, Cities Service today offers distributors expert assistance in conversions and technical problems, accounting, credit, new business, routing, labor-management relations, collections, expansion, and fleet maintenance.

For more information, talk with a Cities Service representative from the nearest office.

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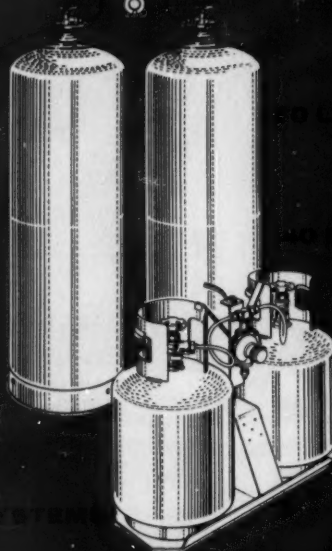
20 N. Wacker Drive
Chicago 6, Illinois

6611 Euclid Avenue
Cleveland 3, Ohio

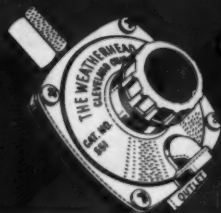
170 University Ave.
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TO PLAN
YOUR ORDERS
ORDER BY PLAN



Weatherhead Package Plan



new
551
Weatherhead
LP-Gas
regulator

Progressive dealers everywhere are learning that the Weatherhead Package Plan means real purchasing efficiency. And Weatherhead delivers quickly, where and when you want them. Just one order . . . for cylinders, regulators, valves, fittings — complete changeover assemblies from a reliable single source WEATHERHEAD.

Weatherhead cylinders are of rugged 2-piece construction for maximum strength and longer service life. The 21001 extra fast fill cylinder valves have easy turning handwheels for more perfect shut-off — more positive lift opening.

. . . ask about the 551 Regulator merchandising program featuring personalized dealer decals **FREE OF CHARGE** with minimum orders of 250.

**WARRANTY
PROTECTION ON
ALL WEATHERHEAD
LP-GAS PRODUCTS**



THE WEATHERHEAD COMPANY

LP-Gas Equipment Division
CLEVELAND, OHIO

Your One Complete Source of LP-Gas Equipment

Code symbol and certificate-procedure to follow to obtain them, and welded repair procedure.

Copies are available at \$6.50 per copy from Robert Chuse, P. O. Box 91, Leonia, N. J. Single charts can be had at \$1.00 each.

General Controls acquires automatic valve company

An agreement by General Controls Co. to purchase the assets of Foster Engineering Co., Union, N. J., was announced recently by William A. Ray, president.

The purchase is subject to the approval of the stockholders of General Controls.

Manufacture of regulating equipment for controlling pressure, temperature, level and flow of steam, gases and liquids, with which Foster has been identified since 1879, will be consolidated with the Hammel-Dahl division at Warwick, R. I., which was acquired in January 1958.

Mr. Ray said a new plant will be built at Warwick Industrial Park to house operations of Foster, which will become a division of General Controls after formal acquisition Feb. 1, 1959. The plant is already in the design stage. All qualified Foster employees, according to Mr. Ray, will be moved with their families from Union to Warwick, some 200 miles, at company expense.

Propane-air plant features "push-button" starting

A new propane-air plant installation, which makes possible quick change-overs from natural gas to propane and back, is now serving as a stand-by to supply the city of Naugatuck, Conn., in time of emergency, with 75,000 cfh of 1400 Btu, 1.30 sp. gr. substitute gas. The equipment was designed and constructed by the Selas Corp. of America for the Waterbury South Gas Plant of Connecticut Light & Power Co.

The installation automatically mixes propane with air in the correct proportion and compresses the mixture to the required distribution pressure. Since the mixture can be used in existing gas-burning appliances without adjustment, it assures an uninterrupted supply of fuel to the entire area being served, should the utility's supply of natural gas be cut off.

Exclusive of propane vaporizing equipment, the installation is com-

THIS

Move!



MAKES A BIG NAME BIGGER AND A GREAT LINE GREATER

TEMCO Announces the NEW

Magic Chef

Wonder Warm

GAS HEATERS

for 1959



MODEL NO. 8872



MODEL NO. 8871

Temco, Inc., manufacturer of more than one and one-half million heating appliances, now introduces Magic Chef, a name synonymous with the best in heater design and engineering features for over half a century.

The result is Magic Chef **WONDER WARM**, the gas heater that puts the heat on the floor where it's needed most. This exclusive Magic-carpet Heat flows from wall to wall, and floor to ceiling.

It's the big comfort feature that will appeal to your customers. And, there's a Magic Chef **WONDER WARM** style for every home need. Make sure this famous line is well represented in your store ahead of the 1959 heater season!



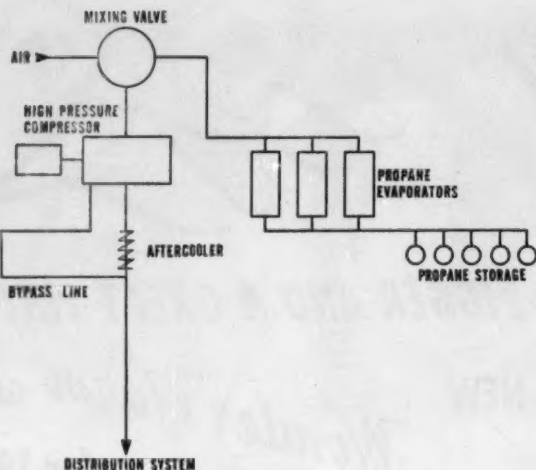
MODEL NO. 8820



Wonder Warm

Division TEMCO, Inc.
Nashville 9, Tennessee

Diagram of the propane-air plant which features "push button" starting and is now serving as a stand-by to supply the city of Naugatuck, Conn., in time of emergency.



prised of a Selas propane diluter, which has a ratio control valve for convenient and instantaneous variation of gas-air mixture, and a special water-cooled compressor. Accurately machined gas and air metering ports in the balanced pressure, full floating mixing valve provide precise control of gas-air ratio, with turndown through a range of 50:1.

The discharge pressure of the system is 29 psig. Compressed gas

passes through a meter manifold, after-cooler, and then into the distributing system. Mixture is recirculated through by-pass piping during periods of reduced demand.

Clayton equips 28 trucks with demonstrator units

In order to speed the introduction of its new Blast-Master steam cleaner and Clayton-Sellers heavy

duty hydraulic jet cleaner units, Clayton Manufacturing Co. has purchased 28 Model A-120, three quarter ton International Harvester trucks on which have been mounted demonstration units.

Both the home factory at El Monte, Calif., and branch factory at Cincinnati, Ohio, are participating in this effort to speed delivery to nationwide territories. Every unit is self-sufficient complete with power plants and fuel storage.

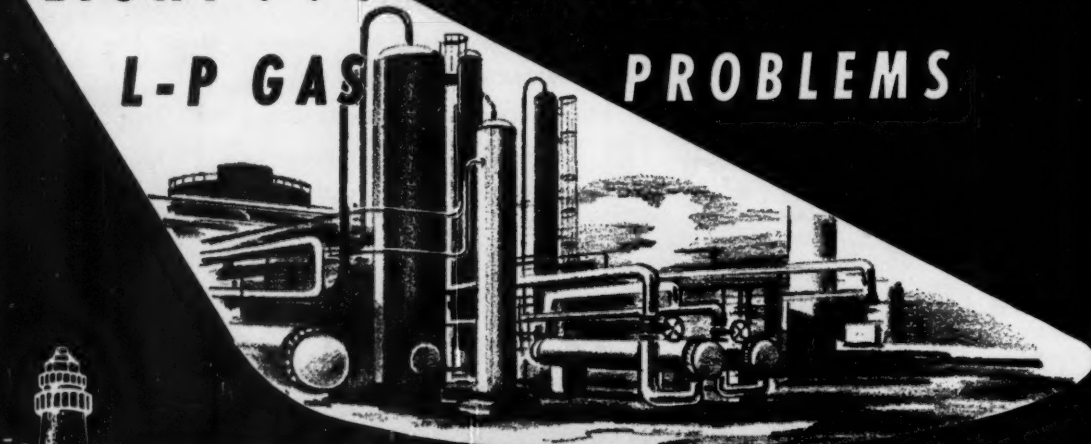
These units will also furnish emergency steam cleaning whenever called upon, states J. A. Cortright, vice president of sales. "Furthermore," he said, "this service will be available to anyone whether they use a Clayton unit or not."

GAMA publishes new industrial gas directory

A new booklet—listing a wide variety of gas equipment for industrial uses—has been published by the industrial gas equipment division of GAMA.

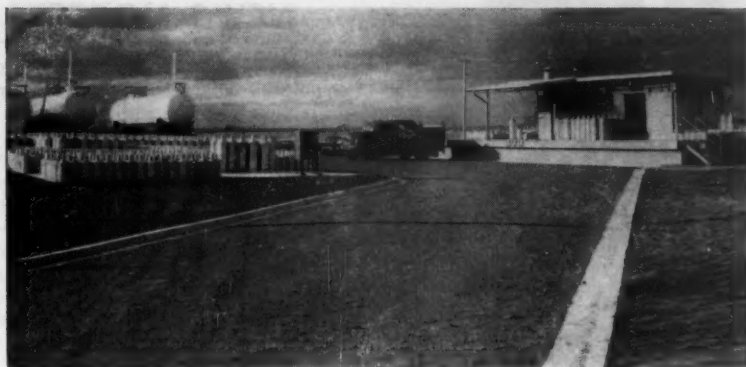
The publication lists the names and addresses of 36 manufacturers with brief descriptions of the type of industrial gas equipment that each company produces. It also

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LIGHT . . . ON YOUR
L-P GAS PROBLEMS**



BEACON PETROLEUM COMPANY

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Newest LPG plant in Australia is this one recently opened by Gas & Fuel Corp. of Victoria, Melbourne. The LPG division has 600 customers after six months of operation, starting with a temporary filling plant and graduating to the modern plant pictured here. Gas & Fuel Corp. officials John Shaw and George Barrow gathered information for LPG plant operation following a visit to the United States including a stop at BUTANE-PROPANE News.

lists various types of equipment in alphabetical order together with the names of producers of each type.

All of the manufacturers are subscribers to the division's Code of Ethics which was instituted several years ago to insure the highest standards of design, construction, durability, performance and safety in industrial gas equipment.

Copies of the booklet are available at 50 cents a copy from GAMA, 60 E. 42nd St., New York 17, N. Y.

Canadian markets open with railroad extension

The completion of the Pacific Great Eastern Railway into Prince George, in northern British Columbia, is expected to open up many new markets, including those using propane.

The PGE, affectionately known as the Prince George Eventually, was previously famous for the fact that it started nowhere and ended nowhere. The southern terminus was extended some years ago from Squamish into Vancouver, and now with the extension to the Canadian National at Prince George it provides an important line of commerce up the middle of British Columbia.

It will now be possible to tap the large supplies of butane and

propane produced at the Fort St. John and other gas fields in the Peace River Block and ship them via tank car to markets to the south along the PGE. The country along the railroad is primarily ranching and lumber.

Eclipse Fuel buys Norwalk Valve Co.

Purchase of Norwalk Valve Co., South Norwalk, Conn., is announced by A. Campbell Perks, president of Eclipse Fuel Engineering Co., Rockford, Ill.



COLUMBIAN'S "SAFE-T-TWIN"
does TWO jobs...
Two Ways Better!



Now you handle both butane and propane deliveries better and more easily from the Columbian "Safe-T-Twin" tank truck unit. Both in heavy, hectic city traffic and on "off-the-pavement" rural fuel deliveries, the specially designed, small-diameter (42" I. D.) twin

tanks with their low center of gravity give stable balance, easy maneuverability and ideal handling. (Wherever you go, Columbian serves you best!) Tanks shown above total 1500 gallons capacity, but are available in sizes to suit your need.

"SAFE-T-TWIN" SPECIFICATIONS: ASME 1956 Code working pressure of 250 lbs. Hemispherical heads and countersunk relief valves. Tanks manifolded on liquid and vapor and equipped with 2" Viking KK 200 Propane pump with mechanical seal. 1 1/4" Neptune 433 meter with printing counter. Motor driven dual reel. Liquid and vapor hoses serve either tank, are housed in rear cabinet. Complete ICC lighting and wiring.

WHAT DOES YOUR BUSINESS NEED?

The "Safe-T-Twin" and LP "Advertiser" truck tank units are two examples of fast, efficient Columbian delivery equipment so important to profit in the LP Gas business. Columbian makes

custom units of any size—semi-trailer transports and delivery truck units—to meet the requirements of your particular business.



COLUMBIAN LP "ADVERTISER"

Clean, modern design advertises you as an up-to-date distributor. Compact rear double door cabinet houses all controls, fittings, meter, 150 ft. 3/4" hose on power reel. Fully equipped with ICC lights and wiring. Meets all state and federal requirements. Capacities from 1200 to 2500 gal. (Capacities above 2000 gal. should be on dual-axle trucks.)

Call in Columbian. Write for specification sheets and quotations, or for an engineering estimate on a custom-built unit. Tell us your requirements. Write or phone.



COLUMBIAN STEEL TANK COMPANY
P. O. Box 4048-C Kansas City, Mo.

STEEL, Master-Crafted by Columbian... First for Lasting Strength.



Ribbon cutting ceremonies that climaxed dedication of National-U. S. Radiator Corp.'s million dollar engineering center in the company's new 8-acre research park at Johnstown, Pa., gave President T. B. Focke (right) an opportunity to express the company's appreciation to Peter M. Sarraiocco, National-U. S. executive engineer and secretary of the management advisory committee, who was responsible for getting the facility built.

Included in the purchase were all the machinery and the complete product line consisting of: Norwalk and Connelly valves, regulators, governors, filters, and gauges.

Machinery, tooling, engineering files, and inventory are being moved to the main Eclipse plant in Rockford. Manufacturing and sales activities will be carried on under the designation of Norwalk Valve division, Eclipse Fuel Engineering.

Lost: 1620 million gal. of LPG in BPN office

Someone in the BUTANE-PROPANE News office lost 1620 million gal. of LPG last month. In the article "Underground Storage Keeps Growing," which appeared on page 35 of the December 1958 issue, total underground storage capacity was reported at 42,558,000 bbl or 180 million gal. But the 42,558,000 bbl, which is the right figure, actually comes to 1800 million gal.

There must be a lesson in all of this somewhere. Because a little zero was dropped, we lost 1620 million gal. of LPG.

First reader to point out the error was J. Woodward Martin, L. P. gas sales manager, Shamrock Oil & Gas Corp., Amarillo, Texas.

Motorola introduces new two-way mobile radio unit

Greater reliability and lower power drain result from Motorola's new two-way mobile radio which uses more than 20 transistors. The mobile unit—half the size of conventional radios—was unveiled recently in Los Angeles.

Savings of from \$41 to more than \$300 per unit are possible due to the fact that the unit uses only one-third the power required for conventional models, Motorola officials claim. The receiver and power supply are fully-transistorized with transistors replacing tubes, vibrators, and the dynamotor. Savings result from less fuel, less engine wear, less battery use, no need for heavy duty generators, and lower radio maintenance.

Custom designed by Master Tank & Welding, Dallas, Texas, for Grasso Bros. Inc., St. Louis, Mo., this blimp measures 77 1/4 in. OD by 38 ft 2 1/2 in. OAL, and has an 8600 water gallon capacity. The unit is fabricated of "T-1" steel, the newest development in light weight material for pressure vessels.



NEWS NOTES

Apex Supply Co., Dallas, has been appointed distributor of Rheem water heaters, heating and air conditioning by the Home Products division of the Rheem Manufacturing Co., it is announced by Joe Lerer, Apex president. In addition to its function of maintaining inventories for immediate delivery to its customers, Apex Supply has begun active participation in the merchandising programs developed and sponsored by Rheem.

Chambers Built-Ins Inc., Chicago, has appointed 20 new distributors east of the Mississippi to handle a complete new line of packaged built-in kitchen appliances.

Rheem New Zealand Ltd., wholly-owned subsidiary of Rheem Manufacturing Co., will build a plant this winter at Wellington, New Zealand, A. Lightfoot Walker, president, said.

Pyrofax Gas Corp. has just opened a new cylinder filling and bulk plant in Kilmarnock, Va., according to Walter A. Naumer, president. Mr. Naumer also announced the opening of a bulk plant in Cokato, Minn., and the addition of cylinder filling facilities to the existing bulk plant in Lancaster, Pa.

October 1958 shipments of gas ranges totaled 215,400 units, the largest monthly figure in two years, GAMA announces. The total for free-standing and built-in models was the largest since the 219,100 in October 1956. It was 10.2 per cent above the 195,500 shipped during October of 1957. For the first 10 months of 1958, the latest figure, 1,548,700, was down 7.7 per cent from the 1,678,500 a year earlier.

New York dealers hold management course

"Credit and Collections," "Business Insurance" and "Management Analysis" were the three principal subjects offered for workshop discussion at the third annual management course held at Cornell University, Ithaca, October 6-8, under the joint sponsorship of the New York State School of Industrial Relations and the New York State LPGA.

The program was planned with the assistance of the educational committee of the association, under the chairmanship of Ralph Fisk, of Cobleskill. It was designed as a workshop to provide participants with an opportunity to explore, in depth, the three problems named above. All of those participating, when queried, commented that this was the first time they had had the opportunity of comparing phases of their business with other LPG operators.

The evaluation of a management analysis survey that was commenced last year was offered at the final session program. The purpose of the survey was to accumulate statistical percentages so that a given L. P. gas member marketer can at any time compare his operation with the average record in his association group. The survey form will be slightly changed this year and will again be mailed to members for cooperative reports.

It is anticipated that this service will develop norms for any size or type of operation and will give the marketer seeking information a good yardstick to use as a management tool.

R. Clifford Lough elected president W. Va. LPGA

What is the "Outlook for the Small L. P. Gas Operator?" This arresting query was answered in detail recently when Walter H. Hoagland, Fisher Governor Co., addressed the October 10 convention of the West Virginia LPGA in Clarksburg. Many examples of wise management obtained from different companies were cited to help guide distributors in their

efforts to meet today's competition and the changing conditions of the immediate future.

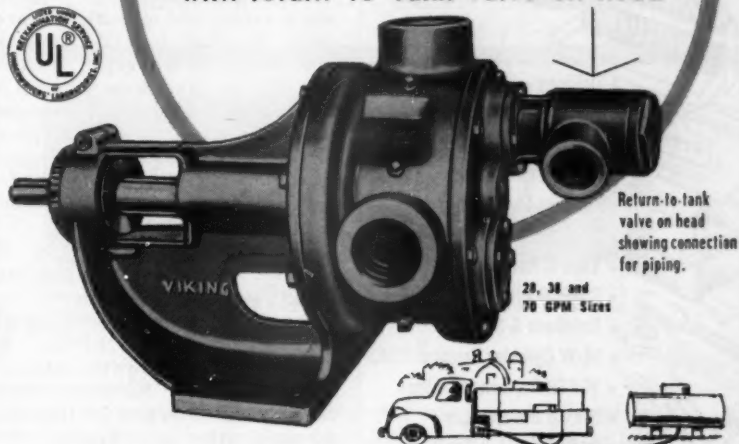
Following Mr. Hoagland's talk, outgoing President W. M. Morgan opened the business meeting and conducted the scheduled merchandising panel on the subjects of merchandising, cylinder maintenance and credit, with Edward

Withrow, "Magic Chef"; Paul Dooper, Pressed Steel Tank Co., and Mr. Morgan, respectively, handling the topic subjects.

Newly elected to the presidency was R. Clifford Lough, Grafton Road Bottle Gas, Morgantown, W. Va. He will serve the association for the year 1959.

Charles D. Johnston, Samson Co., Clarksburg, was named vice president; C. William Faulkner, Gas Service Inc., Bluefield, secretary; and R. L. Daugherty, Daugherty Propane Co., Mineral Wells, treasurer.

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MORE MONEY**
by faster delivery with
VIKING LP-GAS TRUCK PUMPS
with return-to-tank valve on head



Yes, you make more money by using Viking truck pumps because you save valuable loading and unloading time. Many fleet owners have proved that fact to their own satisfaction and now use Viking Truck pumps only. If you'd like information about Viking Pump's money-saving abilities, just ask for it.

Note these facts: with Vikings you have mechanical seals with O-ring gaskets, integral thrust bearings, return-to-tank valve on head, and automatic internal pressure lubrication of internal bearing.

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348 E. Walnut Lane Philadelphia 44, Pa.
Serving the Gas Industry for Over 40 Years

New directors are Robert E. Statler, Charles D. Johnston, Donald W. James, Mrs. Harry Sapp, C. Wade Gibson, Bernard E. Marrs, W. M. Morgan, Walter Hoagland, and John Adams. Directors holding over for another year are W. H. Wageley, A. D. Steven Jr. and Paul P. Winfrey.

The convention committee was co-chaired by Cliff Lough and Charles Johnston.

New England group holds 10th annual meeting

The 10th annual meeting of the LPGA of New England was held in Boston October 28. Of principal interest was the election of officers for the ensuing year. Those chosen are:

President, John D. Stone; vice presidents, Alfred Thomas and Henry Merrill; secretary, Ray Murray; treasurer, W. A. Sanford. Directors for even numbered regions: Harvard E. Reynolds, A. E. Reid, Charles Jackman, Sterling Nelson, Allan Sleeper and Joseph Falk. Director-at-large: William F. Holmes.

The first feature of the program was a safety and operations workshop, directed by Ed Johnson, with the aid of five experts. Questions for the panel were solicited in advance and discussions centered around safety in general and problems pertaining to phases of plant operation for cylinder dealers, for bulk plants and for combinations of both those groups.

Speakers in order were R. H. Mahnke, vice president National LPGA, on "News and Views from Chicago"; Arthur E. Bone, president of National LPGA, on "Larger Profit Growth Ahead," and Prof. John Matthews, Harvard Graduate School of Business Administration on "Factors that Affect Net Profits."

Emmett Nystrom heads Minnesota association

At the October 27-28 fall convention of the Minnesota LPGA in Minneapolis, Emmett Nystrom was elected president for the ensuing year. He is head of the Nystrom Shellane Service Co., Worthington, Minn.

Other officers elected: First vice president, Calvin E. Forbes, King Gas Co., Osseo; and second vice president, Art Peterson, Utility Gas Co., Gaylord.



Outgoing president R. C. Schuerman, Minnesota LPGA, conducting the final business session at the group's fall convention.

New directors are Robert Freeberg, Miles Hall, H. E. Hansen and Andrew J. Tirpak.

Nearly 200 L. P. gasmen attended the meeting. Featured speakers were Richard Muellerleile, City Service Corp., Chicago; and Wayne Field, Hope Chest Co., Minneapolis. Classroom style educational features included the subjects of "Human Relations"; "LPG Control Workbook"—Minneapolis Honeywell; "Telephone Techniques," and the "Cost of Doing Business," by Bob Manning, Rapid Thermogas Co., Des Moines, Iowa.

A television broadcast, from a Minneapolis T. V. station, emphasized the modernity of L. P. gas. Promotional material for the skit was furnished by the LP-Gas Council. Lars Larson, Consumer Gas Co., was the principal actor.

R. C. Schuerman was the outgoing president; Joseph H. Reagan was convention chairman, and Richard J. Werner secretary-treasurer.

WLGA mid-year meeting attracts 100 to L. A.

Discussions of the new weights and measures code and the new safety orders for L.P. gas in California highlighted the mid-year meeting of the Western Liquid Gas Association which attracted nearly 100 members to the Statler Hilton hotel in Los Angeles, November 17 and 18. Explanations of the new regulations were made by A. I. Snyder, supervising engi-

neer, California Department of Industrial Safety, and Dan Perkins, director of the Division of Weights & Measures. Both of these men have been touring California to present the discussion program to WLGA meetings in other parts of the state.

A luncheon meeting preceded the regulation discussion on the first day of the two-day confab while the WLGA Board of Directors meeting occupied the second day.

Speakers at the luncheon included Rudy Munzer, 2nd vice president of the LPGA, who discussed the national association's activities; John Agbashian, president of the WLGA, who told of the California association's activities, and A. L. "Dock" Walters, WLGA executive director, who outlined a blueprint for WLGA action. Roland Usher, American Liquid Gas Inc., presided as chairman of the mid-year meeting.

Among the head table guests were W. F. DeVoe, president of the National LP-Gas Council, and George Schulte, Council director, who held an Executive Committee meeting of the Council coincident with the WLGA meeting. One of

the outcomes of the Executive Committee meeting and of a joint meeting of that committee and the public relations committee of the WLGA is a plan whereby the Council will add, as soon as possible, a public relations field representative for the West Coast. He will be headquartered at the WLGA San Francisco office.

One of the major items on the association's agenda for the months ahead is the opening of the city of San Francisco to LPG. Long the last remaining major city which does not allow the sale of L.P. gas, San Francisco has—through the workings of WLGA—invited the industry's cooperation in writing an LPG code.

Well known writer joins LP-Gas Council staff

The National LP-Gas Council, public relations and advertising organization for the entire LPG industry, has secured the services of William E. Ehlscheid as a staff writer.

The appointment is announced by W. F. DeVoe, president of the Council, who states that Mr. Ehl-



W. E. Ehlscheid
National Council

scheid's association in the immediate past with the building industry will make him specially valuable to industry effort.

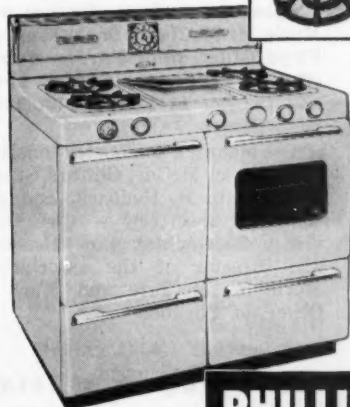
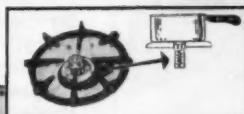
As technical editor of *Practical Builder* magazine, he has gained wide knowledge of design and construction of restaurants, schools, residences and commercial buildings.

Mississippi dealers elect Gresham Jr. its president

At the annual fall business meeting of the Mississippi L.P. Gas Dealers Association on November 9-10, W. W. Gresham Jr. was elected president for 1959. He succeeds John A. Grice.

it takes.... *Enterprise*

Perfectrol,
"the burner with a brain"



G-18364-5-CP

to offer so generous a floor plan!

No down payment is required when you floor plan Enterprise gas ranges. There are no charges of any kind for the first 90 days. And, only one-half of one per cent on the balance outstanding is charged from 90 up to 180 days.

This generous Enterprise floor plan gives you time to sell at the profit you should have. And, you have something extra good to sell: non-rust porcelain finish inside and out, one-piece all-welded chassis, Perfectrol automatic top burner, Kitchen-Mated color panels.

A generous cooperative advertising allowance is available to help get the Enterprise story to your prospects. Ask your Enterprise-ing salesman about it.

PHILLIPS & BUTTORFF CORPORATION

Nashville, Tennessee

... in our 100th year

PORTRAIT of a PROFIT MAKER



WALDORF Automatic L-P Gas Clothes Dryer A.G.A. APPROVED

Deluxe Model has attractive back splasher . . . 3 stage temp. selector . . . 120 min. Timer Control . . . automatic pilot ignition. Also available with manual ignition. Smooth, no-sag 27" drying drum . . . front & rear bearings . . . takes up to 20 lbs. wet weight . . . front lint trap . . . front & rear venting . . . direct air flow for max. drying efficiency . . . 100% safety controlled.

For the Waldorf Profit Maker Story, write to Dept. 1



Newly elected officers of the Mississippi L. P. Gas Dealers Association are: Seated, (left to right) O. W. Pittman, Corinth, vice president; W. W. Gresham Jr., Indianola, president; P. A. Johnson, Crystal Springs, vice president. Standing, James Magee, Tylertown, vice president and Carl Harris, Raleigh, vice president. The group held its annual fall meeting in Jackson at the King Edwards hotel on November 9-10.

Other officers elected are O. W. Pittman, James Magee, and Carl Harris, vice presidents; and P. A. Johnson, secretary-treasurer.

Among those addressing the

meeting were Senator John Stennis, W. H. Swartzendruber, Jack Grundfest, William Flauett and C. D. Prichard, the last named a director of the Liquefied Compressed Gas Division of the state.

Indiana men enthusiastic over managers' conference

The October "Owner and Manager Conference" of the Indiana LPGA developed so many helpful ideas and was so enthusiastically approved by those who attended that the meeting will become an annual affair, according to Sherman McCoy, president of the association.

The managers' conference was held under the auspices of Purdue University in Lafayette, Ind., with Mark E. Ocker, division of adult education at Purdue, acting as supervisor. It emphasized the "manager's responsibility to the employees for training, for the establishment of proper attitudes, and for the establishment of operational policy," according to the program covering the two-day session.

Speakers at the conference were Merle M. McClure, D. C. King and Floyd Gillis, all of Purdue University; G. C. Klippel, Robert B. Green and George A. Saas, Indianapolis businessmen.

The planning committee consisted of Sherman McCoy, Clifford Stapleton, Phillip R. Hedback, and Jim Young, respectively — president, vice president, secretary-treasurer, and director of the association; Merle M. McClure and Mark E. Ocker, of Purdue.

Safety program of Texas dealers now paying off

The long campaign for safety in the operation of all branches of the liquefied petroleum gas business by

Elgin's NEW Model 50 Fully Automatic Water Conditioner A NATURAL FOR YOUR MARKET

For soft, rust-free, filtered water —
Automagically!

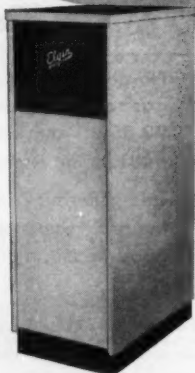
A complete city and well water conditioner, Elgin's new Cabinet Model 50 softens water, removes rust and filters for sparkling clarity in one automatic operation.

The Model 50 is easy to install and requires minimum maintenance and salt attention. A "most wanted" appliance, easily sold on its looks and performance in city and rural areas alike, it is a natural tie-in with home improvement plans.

Elgin also produces a sales-mate for the Model 50 — the economical, semi-automatic Model 60 tank-type unit. A 3-year guarantee, plus a 10-year warranty, is furnished on both units. And Elgin provides you — the dealer — with sales stimulating merchandising aids and demonstrators to make your selling job easier and more professional.



Semi-Automatic
Model 60



Fully Automatic
Model 50



Write for Full Resale Facts TODAY!
Home Appliance Division
ELGIN SOFTENER CORPORATION
243 N. Grove St., Elgin, Illinois

Texas dealers has recently had public commendation from Governor Price Daniel in the form of a letter to Sam Strong, chairman of the safety committee of the Texas Butane Dealers Association.

In congratulating the association upon the success of its continuing programs for safety over the years, Governor Daniel emphasized the practical fact that the Texas Board of Insurance last summer exempted haulers of liquefied petroleum gas from an advance in insurance rates that affected every other major class of commercial carriers.

Insurance company officials have pointed out many times in the past that the safety education programs of the Texas Butane Dealers Association have been primarily responsible for the decline in the Texas LPG industry's accident experience.

Maryland fire fighters hold LPG demonstration

An LPG live fire demonstration, sponsored by the Maryland LPG, and in conjunction with the Reese Volunteer Fire Co., was held Sept. 16, 1958, on the Reese, Md., volunteer fire company grounds. Firemen and LPG industry personnel from all over the state gathered to witness the controlled propane fires. There were 360 men registered.

The safety and education committee of the association organized the demonstration. Harry Foote, Sun Oil Co., acted as marshal. The program covered controlled liquid and vapor fires, and allowed sufficient time during each phase for the firemen to use different pieces of apparatus and equipment to extinguish the fires.

Local demonstrations at each of the fire companies represented are being planned so that every volunteer fireman in the state will have the opportunity to see and participate in training of the proper method of handling L.P. gas fires.

Harry Rosen will lead New Jersey group in '59

The 1958 annual convention of the New Jersey LPGA elected Harry Rosen to head the organization during 1959. The meeting was held in Atlantic City October 14.

Other officers elected are: First vice president, Henry J. Aust; second vice president, Roy G. Rohel; secretary - treasurer, Frank C.

Barry. New directors are Jack T. Bell, Arthur Benjamin, James L. Earhart, Alois Frickel, Murray Glass, Louis A. Katz, Marcel Lind-enbaum, John J. Long, Harold V. Woodhead, Manuel Gale and Edward A. Keible.

"The Time is Now" was the subject of an address by F. A. Kaiser, Michigan Consolidated Gas Co., and E. F. Butler, Maytag Co., talked on, "Salesmen Have to be Salesmen."

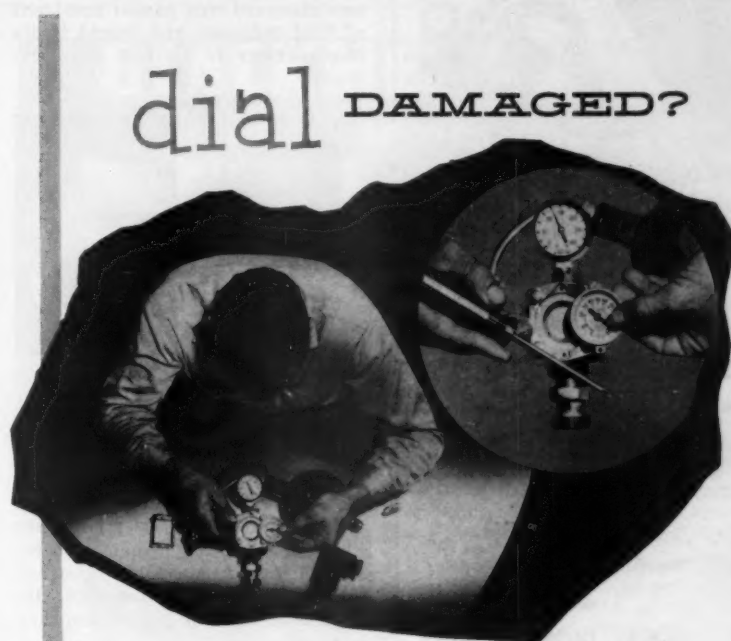
"Mrs. America" and Julia Meade, gas industry hostess, appearing on T. V. program, "Play-

house 90," were presented to the group.

The American Gas Association's 40th annual convention was in session in Atlantic City at the same time, and the New Jersey LPGA members were invited to attend the AGA residential gas section meeting and the parade of gas progress exhibit.

Selling is a game, the most interesting and fascinating game in the world. But it is a game where both sides win, not a game in which there must be a winner and a loser.

Gossips talk to you about others, bores talk to you about themselves and good conversationalists always talk to you about yourself.



It's easy to replace
if it's **ROCHESTER** *Criterion*

Merely remove the damaged dial with a screwdriver and replace with a new hermetically sealed Rochester dial — you lose no gas, even with full tanks! This exclusive Rochester Criterion feature means extra profit for you.

Demand Rochester Criterion gauges on your next tank order or order direct from factory.



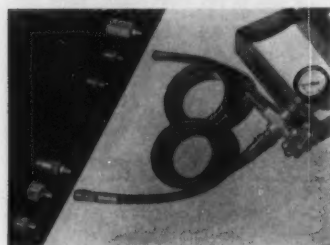
ROCHESTER GAUGES, INC.
OF TEXAS

2425 CAROLINE — DALLAS, TEXAS

SALES OFFICES: DALLAS; ATLANTA; DENVER; CLEVELAND; ROCHESTER; PHILADELPHIA; SAN FRANCISCO; LONDON, ONTARIO

ALL FINE PRODUCTS

"NOSEY JOE" LEAK TESTING KIT



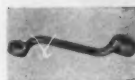
A positive, easy way to detect leaks in LP Gas lines between tank and house regulator. Adapter fittings, gauge, valve, hose fittings and instructions packed in metal box.

SERVICEMAN'S TOOLS



Imperial Flaring Tool

Faceted flaring cone maintains full thickness of tube. Flares aluminum, brass or copper.



Pigtail Wrench

Offset style— $\frac{7}{8}$ " and $1\frac{1}{8}$ ". Fits old and new style pig-tails. 12 point openings cannot slip.



Flexible Manometer Kit

Contains all parts for complete adjusting and testing. Accurate as the finest laboratory U-Tube.



Gas Kit

Complete set of Reamers, Files, Drills, Wrenches, etc., in handy metal box—meets every service need.



Millivoltmeter Kit

Checks open circuit voltage output of #50 and #80 thermocouples. Leatherette case and instructions.



Safety Flashers

Small, compact—60 flashes per minute. Weatherproof, 20-ga. case. Standard 6-volt battery.

Send for Fine Complete LP Catalog

FINE PRODUCTS CO.
6240 OGDEN AVE.
BERWYN (Chicago Sub.) ILLINOIS



THE TRADE

WILLIAM A. HAIST JR., has been appointed president and general manager of the Sprague Meter Co. He succeeds F. LESLIE FAIRCHILD who has served as president since 1932 and has been with the company for the past 40 years. Mr. Fairchild announced his retirement Oct. 22, 1958. Mr. Haist, a former vice president of the Detroit Controls division of American Standard was named president of that company and moved to its headquarters in Detroit last February.



W. A. Haist Jr.
Sprague Meter



C. L. Hastings
Rochester Mfg.

CLARK L. HASTINGS has been elected president of the Rochester Manufacturing Co. He moved up to the position from vice president in charge of sales and advertising. He succeeds Allen H. Ottman, who resigned last April. Mr. Hastings joined Rochester in June 1928. He worked in plant operations and then in sales.

PHILIP S. HARPER JR. has been elected president of Harper-Wyman Co. PHILIP S. HARPER SR., retiring president and founder of the firm, will continue as chairman of the board and will also serve as advisor on product research and development. Mr. Harper Jr. joined the firm in 1948. In 1950 he was made manager of the Princeton, Ill., plant. He became general manager of the company in 1954 and a year later was elected executive vice president.

NORMAN F. GARRETT has been elected vice president and general manager for manufacturing of Crane Co. He has been general manager of the company's Chicago manufacturing division since January 1957. In his new position, he will direct the operations of Crane Co.'s four plants at Chicago, Chattanooga, Tenn., Trenton, N. J., and

Colton, Calif. Mr. Garrett announced the appointment of WALTER KOVALICK as assistant general manager of the company's Chicago manufacturing division. Mr. Kovalick joined Crane in November 1957 as production manager.

CHARLES A. BOGENRIEF has been appointed director of facilities and tooling by Robertshaw-Fulton Controls Co. He will headquarter at the firm's executive office in Richmond, Va. He has been head of the industrial and plant engineering department of the company's Grayson division, Long Beach, Calif., since 1942. He joined the firm in 1937.

DONALD E. MILLER has been named manager of all tank car and truck distribution for Texas Natural Gasoline Corp. He has spent the last 10 years in the L. P. gas industry and during that time has had extensive experience with various marketing companies in truck and tank car distribution and coordination of sales and purchases. He joined Texas Natural in October 1958.

JAMES A. DAYTON has been elected as vice president-manufacturing of American Meter Co. Prior to joining American Meter, he served as a director, executive vice president and secretary of Turner & Seymour Manufacturing Co., Torrington, Conn. He was formerly associated with American Bosch Co., Lux Clock Co., Skinner Motors Inc., and Dayton Manufacturing Co.



J. A. Dayton
American Meter



E. B. Hanmer
Magic Chef

ERNEST B. HANMER has been named sales director for the Magic Chef division of Dixie Products Inc. With Magic Chef for 45 years, he was previously southeastern regional sales manager. He will operate from Magic Chef's sales head-

quarters in Franklin, Tenn., until Jan. 1, 1959, at which time he will be relocated at Cleveland, Tenn.

WILLIAM S. HOWLAND was recently appointed eastern manager of heating sales for John Wood Co.'s heater and tank division. Mr. Howland was formerly with Anchor Post Co. as a district manager in its fluid heat division. When John Wood acquired this division three years ago, Mr. Howland was appointed special field representative.

Establishment of a new branch office in Tyler, Texas, and appointment of five managers of company field offices is announced by the National Cylinder Gas division of Chemetron Corp. **H. J. MCMURTRY** has been named manager in Tyler, transferring to his new position from Oklahoma City where he has been in sales work for the past two years. Also announced is the appointment of **ROBERT L. KIRKLAND** as manager of the division's district office in Shreveport, La., **VERNON D. PRATER** as branch manager in Augusta, Ga., **EDWARD D. WHITWORTH** as manager of the division's Charlotte, N. C., district office, and **P. J. CHADWICK** as branch manager in Knoxville, Tenn.

RAYMOND W. CUMMINGS was elected treasurer of Crouse-Hinds Co. He succeeds J. R. Tuttle to the post of treasurer, while Mr. Tuttle continues as chairman of the board. Mr. Cummings has been with the company since June 1956, elected secretary in April 1958, and serves in a dual capacity.

JACK SEARLS has joined Controls Co. of America as manager of field sales, heating and air conditioning controls. He will be located in the Milwaukee office where he will direct activities of the firm's OEM field sales force. In addition, he will manage the gas product line, concentrating immediately on building gas control sales.

BANNASTER B. ROBISON has been appointed northwest representative for the complete line of Manchester Tank & Equipment Co. tanks and weed burning equipment in Idaho, Oregon, Washington and the Province of British Columbia in Canada.

RALPH A. McLAUGHLIN joined Beacon Petroleum Co. as traffic manager. He has had over 11 years of experience in the L. P. gas industry. He left Service Petroleum

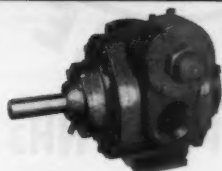
Co. to join Beacon and previous to Service Petroleum, he was with Anchor Petroleum and Mid-Continent. At Beacon, Mr. McLaughlin will head the fleet tank car and truck transport distribution of butane-propane products to markets across the nation.

The Coleman Co. Inc. has divided its sales organization into three marketing divisions according to product classifications and type of distribution. The three divisions and their respective general managers are Home Heating & Air

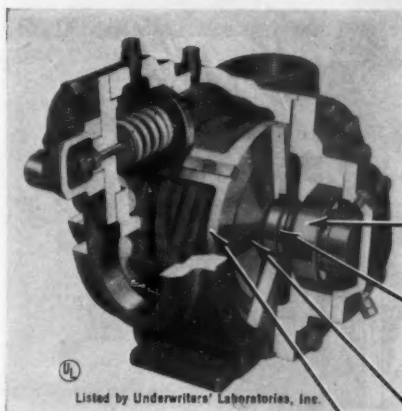
Conditioning, **JESS L. MOORE JR.**; Outing Products, **A. O. BEYER**, and Mobile Home Heating & Air Conditioning, **R. H. LOWE**.

JAMES WOODALL, eastern sales engineer for Sprague Meter Co., resigned from the company in October. He joined Sprague on June 1, 1947, and was sales engineer in the southeastern territory until January 1949. He then moved to Los Angeles serving the company as western sales engineer where he stayed until 1953, and then returned to Atlanta.

BLACKMER liquefied gas pumps



for OUTSTANDING SERVICE
in handling BUTANE,
PROPANE, AMMONIA and
SIMILAR LIQUEFIED GASES



OUTSTANDING DESIGN FEATURES

These features account for long life in service and low maintenance costs experienced by users of Blackmer Liquefied Gas Pumps:

HEAVY DUTY ANTI-FRICTION BEARINGS located on both sides of the rotor and completely isolated from the pumpage.

CARTRIDGE-TYPE MECHANICAL SEALS on both sides of the rotor to control shaft leakage and protect bearings from the pumpage.

SLIDING VANES, which are "self-adjusting for wear," maintain high volumetric efficiency over unusually long periods of service.

CYLINDER LINERS which can be replaced after severe service to restore pump efficiency.

Each pump is tested before shipment to 1250 lbs. hydrostatic and 300 lbs. gas pressure.

PERFORMANCE PROVEN

Blackmer Pumps have earned broad customer preference through their excellent performance with records of handling millions of gallons of liquefied gases at amazingly low operating and maintenance costs.

WRITE FOR BULLETIN 500



"liquid materials handling"® equipment

BLACKMER

BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN

See Yellow pages for your local sales representative

CALENDAR

Coming events in the Industry

All associations are invited to send in dates of their forthcoming meetings for this calendar.

1959

January 11-12—Arkansas LPGA Mid-Winter Meeting—Hotel LaFayette, Little Rock, Ark.

January 14—New York State LPGA Annual Convention—Hotel Van Curler, Schenectady, N. Y.

January 26-28—65th Annual Meeting of the American Society of Heating and Air Conditioning Engineers and the

14th International Heating and Air Conditioning Exposition under the auspices of ASHAE—Bellevue-Stratford Hotel, Philadelphia, Pa.

March 8-10—Indiana LPGA Trade Show and Convention—Claypool Hotel, Indianapolis, Ind.

March 15-17—Ohio LPGA Convention—Sheraton-Gibson Hotel, Cincinnati, Ohio.

April 1-3—Southeast District LPGA Convention and Trade Show—Atlanta-Biltmore Hotel, Atlanta, Ga.

April 9-11—Western Liquid Gas Association Tenth Annual Convention and Trade Show—St. Francis Hotel, San Francisco, Calif.

April 12-14—Mississippi LP-Gas Dealers Association Annual Convention—Edgewater Gulf Hotel, Edgewater Park, Miss.

April 19-20—Kansas LPGA 14th Annual Convention and Business Meeting—Allis Hotel, Wichita, Kansas.

April 20-23—Texas Butane Management Institute—Sponsored by the University of Texas—Fort Clark Guest Ranch, near Brackettville, Texas.

May 3-6—Liquefied Petroleum Gas Association 28th Annual National Convention and Trade Show—Conrad Hilton Hotel, Chicago.

May 19—Maryland LPGA Annual Convention—Lord Baltimore Hotel, Baltimore, Md.

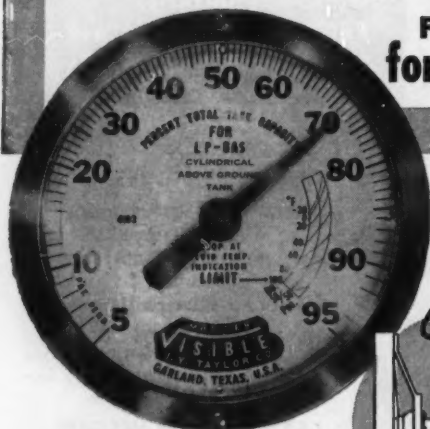
June 24-26—Texas Butane Dealers Association Convention and L. P. Gas Market—Adolphus Hotel, Dallas, Texas.

August 9-14—L. P. Gas Conference—Sponsored by the Florida LPGA—University of Florida, Gainesville, Fla.

September 13-15—North Carolina LPGA—Sir Walter Raleigh Hotel, Raleigh, N. C.

October 12-14—Northeast Regional LPGA Convention and Trade Show—Sheraton-Park Hotel, Washington, D. C.

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**your Biggest Dollar
Value... because
it's TAYLOR-made...**

- Completely Corrosion-Resistant
- Balanced Twin Counter Weights
- Extra Large Stainless Float
- Moisture-Proof Dial Assembly
- Easy-To-Mount Die-cast Head
- Sturdy Die-cast Gear Fork
- Hi-tensile Aluminum TUBING Float Rod
- MANY MORE NEW AND FINER FEATURES

WRITE TODAY FOR FULL DETAILS AND PRICES

MEEDER EQUIPMENT CO
1745 N. EASTERN,
LOS ANGELES

ODELL GLASS CO
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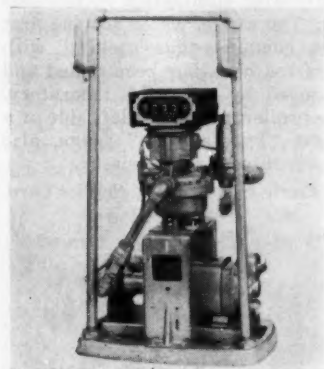


"Horror of horrors, we've scheduled LPG dealer and electrical appliance conventions on the same dates!"

WHAT'S NEW

IN PRODUCTS AND TRADE LITERATURE

For further information on items reviewed in this section use the convenient post-paid Readers' Service Cards on pages 85, 86



Low cost LPG dispenser

Texoil has just introduced a small economical LPG dispenser for fueling small fleets and for industrial users. Not meant for use in resale, the unit is complete with pump, motor and meter—all ready to hook up to a tank. Maximum capacity is 40 gpm, minimum is 8 gpm. Equipped with a Veeder-Root register and concealed totalizer.

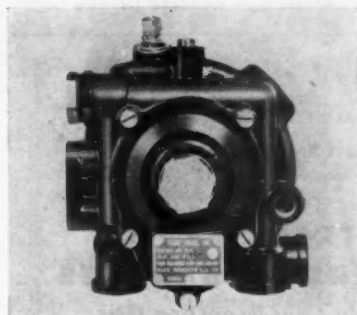
Circle 1 on Readers' Service Card

Circuit breaker

A circuit breaker with a push-button re-set feature which puts mobile radio systems back on the air instantly when main cable fuses fail has been announced by GE. A company official states that the device eliminates the need for replacement of fuses on the main power lead from a vehicle's battery to the radio set. Designed specifically to be used with GE

radio equipment, the new circuit breaker may be installed on other types of communication units with minor modification of the mounting bracket.

Circle 2 on Readers' Service Card



Small vaporizer-regulator

Beam announces its Model 60 L. P. gas vaporizer-regulator. Weighing 1½ lb, 4 in. in diameter, and with a maximum thickness of 3 in., it can handle up to 60 hp engines. It includes a patented built-in vacuum lockoff device, and freeze plug protection. It has a sturdy mounting boss and maintains Beam's principles of no gaskets and screws in the water chambers.

Circle 3 on Readers' Service Card

Built-in gas oven

Welbilt has introduced a built-in gas oven. It has been designed to integrate the outer frame and has the effect of improving and enlarging the appearance. A newly-designed instrument panel, including

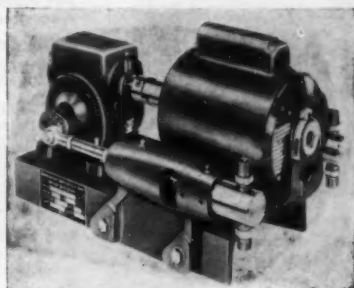
a novel clock arrangement has been incorporated into the unit. The oven is shipped completely assembled, ready to be inserted into the cabinet and connected. It is available in coppertone, pink and yellow porcelain enamel and brushed chrome.

Circle 4 on Readers' Service Card

Winter air conditioners

Janitrol announces a line of gas-fired winter air conditioners. The units have an overall height of 46½ in., making them well suited for installation as either high-boys or as low-boys, since only 4 ft 8 in. headroom is needed for furnace and ducts. The models, available with 80,000 and 100,000 Btu inputs, are AGA approved for zero clearance at the sides and back, 1 in. from top of plenum to ceiling and 6 in. front clearance.

Circle 5 on Readers' Service Card

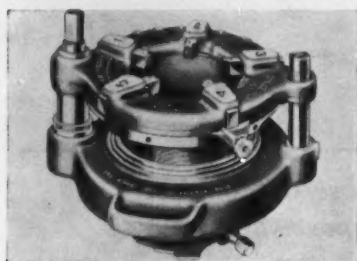


Proportioning pump

Series 100 controlled capacity pumps, just introduced by American Meter, were designed for mov-

ing specific volumes of fluids wherever low initial cost, design simplicity, accuracy of control and minimum maintenance cost are prime requisites. Simplex models handle capacities ranging from .65 gal. per hr to a maximum of 13.10 gal. at maximum pressure of 1000 lb per sq in. Duplex models are rated at double the capacities of the Simplex models.

Circle 6 on Readers' Service Card

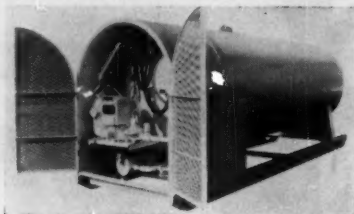


Geared pipe threader

Rigid No. 161, 4 to 6 in. geared pipe threader has just been announced by the Ridge Tool Co. The threader is jam-proof for safe threading with power drive. There are no dies to change. It threads all four sizes, 4, 4½, 5 and 6 in. pipe or conduit with just one set of dies

that are cam activated and can't fall out. Size setting is said to be fast, easy and positive.

Circle 7 on Readers' Service Card



Self-contained dispensing unit

A fully equipped, self-contained dispensing unit marketed by Buehler Tank is mounted on skids and equipped with a three-quarter horsepower motor that delivers up to 10 gal. a minute. Other sizes installed to customer's specifications. The servicing equipment is installed at one end of the tank and is equipped with an expanded metal door that can be locked when the unit is not in operation. The complete unit weighs approximately 3750 lb. It is delivered ready for immediate use and needs only to be connected to an electrical outlet.

Circle 8 on Readers' Service Card



Infra-red broiler on gas range

A new principle in gas cooking, the MicroRay infra-red broiler, has been developed by Pyrofax Gas in cooperation with Hardwick Stove. Principle advantages are: cutting of cooking time up to one-half or better; significant lowering of gas consumption; cooler cooking; sealing in of juices and reduction of spattering; elimination of preheating. The range, which for the first time combines gas cooking with infra-red heat, has been tested and approved by the AGA laboratory. The broiler, set on the left side of a deluxe "Pyrofax Gas" range, also incorporates a rotisserie.

Circle 9 on Readers' Service Card

NOTHING

heats like ...

GAS

is more modern than ...

is more economical than ...

NO BLOWER OR POWER NEEDED

BUZZER

REG. U.S. PAT. OFFICE

JUST CONNECT TO GAS SUPPLY

INDUSTRIAL GAS BURNERS & FURNACES

Using Only Low Pressure Gas

for Clean, Fast, Quiet Heat-Up at Lowest Cost!

BENCH TYPE OVEN
FURNACES for heat
treating and pre-heating.
Temperatures to 2000° F.

PIPE BURNERS for even heat distribution
in any capacity.

NOZZLE BURNERS for all capacities
up to 1¼ million BTU's.

RING BURNERS
for all capacities up
to 500,000 BTU's.

Write today
for complete
"BUZZER"
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CHARLES A. HONES, INC.

133 So. Grand Avenue, Baldwin, L.I., New York • BALDWIN 3-1110

"BUZZER" Burners & Furnaces for Heat Treating, Melting, Soldering



Portable heater

The Model H-2 Agri-Quip "Heat-Master" offers a variable Btu output with the same unit (150,000 to 500,000 Btu). This eliminates buying a different heater for each heat requirement. The unit is portable. L. P. gas is used as a fuel for both the burner and the engine that propels the fan. A directional heat outlet (6 x 24 in. opening) can be adjusted to any position in a complete circle to allow the operator to direct heat "where he wants it." It is highly portable so that one man can handle it on a scaffold or take it into a basement.

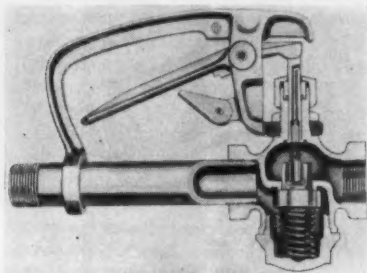
Circle 10 on Readers' Service Card

LPG safe handling film

A new sound film entitled "Respect," which deals with the safe handling of L. P. gas, is available from Phillips to interested organi-

zations as well as distributors. It shows how those handling the gas should respect it, not fear it. This is done by portraying a distributor indoctrinating a new employee in the properties of the gas and showing him the proper, safe and economical ways of handling it.

Circle 11 on Readers' Service Card



Lever operated globe valve

Ohio Brass has improved its UL listed lever operated globe valve by adding a hold-open latch and redesigning the upper stem for greater safety. The latch, which is set by finger pressure, permits the operator to service a tank without having to hand-hold the valve open. This valve is made so that back pressure gas escapes up the hollow stem and out through a small port. By redesigning the lever end so that it clutches flattened surfaces on the stem, the escape port is directed away from the operator's hands at all times.

Circle 12 on Readers' Service Card



Gaslite for entrance ways

The "doorman 400," a new model of gaslite designed for wall mounting, has been introduced by Arkla Air Conditioning Corp. It is assembled with a bracket attached to the bottom for mounting, either singly or in pairs. It is equipped with a manual by-pass valve and pilot light for manual control, like

on a kitchen range. An on-off handle located underneath its mounting bracket permits instant relighting. This model is the smallest in Arkla's line, with an overall height of 13½ in. and an overall width of 10½ in.

Circle 13 on Readers' Service Card

Fire fighting equipment

Complete remote control from a distant hose site pull box is one of several features of the new stationary dry chemical hose line systems developed by the Fry-Fyter Co. A single pull handle at the hose site

simultaneously opens the valve, pressurizes the tank, and fills the system with fire-killing chemical powder. Three models are offered—150, 300, and 500 lb dry chemical capacity—in compact "package" designs requiring a minimum of floor space.

Circle 14 on Readers' Service Card

Dry chemical extinguishers

A family of dry chemical fire extinguishers has been announced by Ansul Chemical. The feature "fresh fill" performance including maxi-

NEW NOW UNDERWRITERS' APPROVED AT NO EXTRA COST



MODEL EC-1

LP-GAS PUMPING UNIT

Rated Transfer Capacity, 10 GPM

★ Competitive low cost

★ Superior Smith construction

★ Our own patented mechanical shaft seal

★ Built-in strainer

★ Built-in bypass valve

★ Continuous duty motor with switch and overload protection

★ 10 GPM with vapor line, 7 GPM without vapor line,
75 P.S.I. differential

★ Easiest to install

★ Super-hard gears

★ Rugged, heavy-duty, weight uncrated 100 lbs.

Let us help you save money on first cost, installation cost, and maintenance, with this fine pump.

Write:

SMITH
PRECISION PRODUCTS CO.

RYan 12293 and RYan 12691

1135 MISSION STREET, SOUTH PASADENA, CALIF.

Southeastern Distributor:

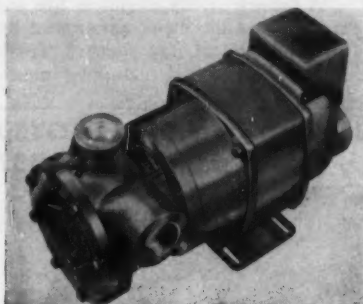
Pand-Johnston Inc. Warehouses in Mobile, Ala.; Jacksonville, Fla.; Jackson, Miss.

Western States Distributor:

Tesco Products, Inc., 3920 West Burbank Blvd., Burbank, California.

mum fluidization, absolute gas tightness and simpler operation. Four models comprise the line: 5, 10, 20 and 30 lb capacities. The UL ratings given the extinguishers are: 8 B:C, 16 B:C, 20 B:C and 20 B:C respectively. They can be obtained in Ansul fire equipment red or in white for maximum visibility in any location.

Circle 15 on Readers' Service Card



Small cylinder filling pump

A pump designed especially for filling Bernz-O-Matic and other small propane and butane cylinders at high differential pressures, has been announced by Corken's. Designated as the "C-9," it is close-coupled with a $\frac{3}{4}$ hp continuous duty explosion proof motor with built-in starter and 115/230 voltage changer, single phase only. It gets up to 85 psi differential pressure in split seconds. It has a $\frac{1}{4}$ in. inlet and 1 in. outlet.

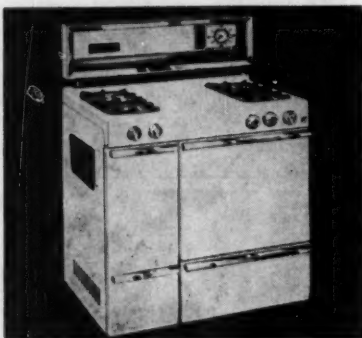
Circle 16 on Readers' Service Card

Automatic tank pressure control

Clark Manufacturing announces its automatic L. P. gas tank pressure control valve. It supplies vapor to the carburetor only at idling speed; at speeds above idling, liquid fuel is instantly and automatically withdrawn from the tank and di-

rected to the carburetor, regardless of tank pressure. Since the liquid passage is approximately eight times the size of the opening of a standard tank valve, full fuel supply is assured under all operating conditions.

Circle 17 on Readers' Service Card



Kitchen-heater gas ranges

Kitchen heating and modern cooking are combined in a line of Roper kitchen-heater gas ranges. Available in both 36 and 40 in. models, they incorporate steel heat-exchangers finished with Dura-Tube high-heat resistant porcelain enamel. A room thermostat regulates the heating function automatically, keeping room temperatures comfortably uniform. Heater lighting is automatic.

Circle 18 on Readers' Service Card

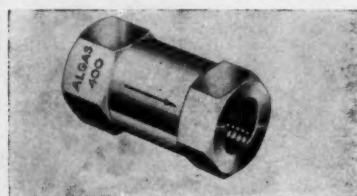


Liquid flowmeter

An industrial liquid flowmeter is announced by Rotron Controls. Based on the "vortex-velocity" prin-

ciple of flow measurement, the meter totalizes 20 to 220 gpm at 1500 psi working pressure. The meter is non-electrical and extremely simple in design with magnetic output coupling driving a 7-digit number-wheel register thereby eliminating any running seal or stuffing box.

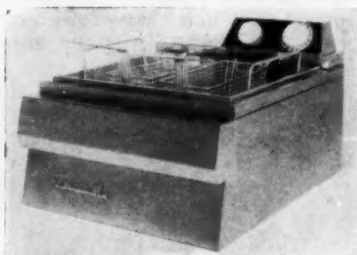
Circle 19 on Readers' Service Card



Line filter

A line filter has been developed by American Liquid Gas. It is machined brass and has a replaceable powdered brass element and Buna-N "O" ring seal. It is $1\frac{11}{16}$ in. long and has $\frac{1}{4}$ in. NPT inlet and outlet. Does not require a mounting bracket. The two-piece threaded body disassembles easily for cleaning or element replacement.

Circle 20 on Readers' Service Card



Counter fryer

Frymaster Corp.'s counter fryer has a lift-out pot for easy cleaning. The fryer measures 18 in. in width, is 9 in. high and has 40,000 Btu input. Capacity is 15 lb of fat. Production is stated at 30 lb of potatoes per hour. The stainless steel cabinet has recessed control knobs.

Circle 21 on Readers' Service Card

Two-way repeater station

A two-way repeater station for land-mobile communications systems allowing cross-over of frequency bands is introduced by Allen B. Du Mont. The incorporation of both the communications channel and the relay channel circuitry as well as all interlinks in a single cabinet will cut space and cabinet requirements in half for repeater

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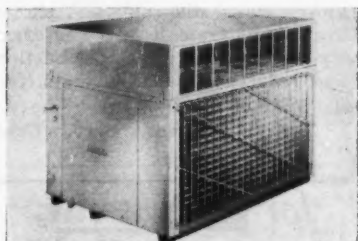
stations, according to the company. The repeater station is designed to operate in both directions with any combination of two of the three frequency bands assigned to land-mobile communications by the FCC.

Circle 22 on Readers' Service Card

Built-in pressure regulator

A complete line of gas water heater controls with built-in pressure regulator is being offered by Robertshaw's Grayson division. The company's standard Unitrols 110, 200 and 400 are now available with pressure regulator in a completely redesigned, all-in-one assembly. The "control package" for water heaters has been reduced to its most compact dimensions, according to a company official. Integrating the pressure regulator within the Unitrol results in savings of about 60 per cent of the space required in mounting the devices separately.

Circle 23 on Readers' Service Card



Condensing unit

A 4-ton condensing unit for central residential air conditioning systems has been added to the line of Lennox. It has been created especially for "in-between sized" installations, gives 49,000 Btuh of cooling when remotely connected with or close-coupled to a 1-ton Landmark evaporator and 51,000 Btuh with a 5-ton evaporator. Dimensions of the 4-ton unit with acoustical hood are 34½ in. in height, 33 11/16 in. in depth, and 59⅞ in. in width.

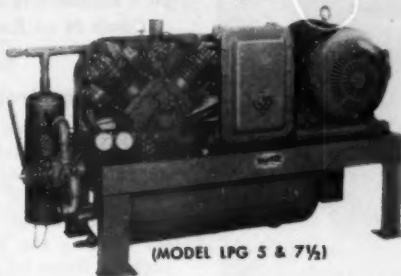
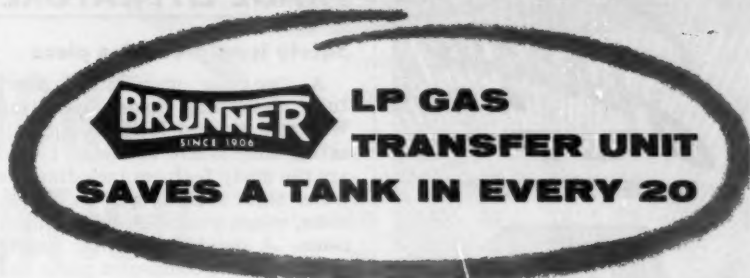
Circle 24 on Readers' Service Card

Soldering, heating and brazing

A new line introduced by Linde includes open-flame torch stems in six sizes and an enclosed-flame soldering iron stem, all of which fit interchangeably on three styles of torch handles designed to operate in both air-acetylene and L. P. gas service. An adjustable pressure regulator, melting furnace, and double-duty hose assemblies complete the equipment.

Circle 25 on Readers' Service Card

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TRADE LITERATURE

Safety lamp promotion piece

A two-color promotional sheet fully describing and illustrating Warren's Starline Model D-5 plastic safety lamp is now available. Listed are the many features including the water tight seal, as well as dimensions, colors available and specifications. A detailed drawing clearly showing all its component parts and part numbers is also included.

Circle 26 on Readers' Service Card

Cooking control bulletin

A field service bulletin has been published by Robertshaw describing the recently-developed top burner thermostatic cooking control with "flame set" feature. "Flame set" allows the homemaker to adjust the flame height to the size and type of the cooking utensil, in addition to selecting the proper cooking temperature. A single dial is used to make both settings. The bulletin is intended as a complete guide for servicing and installing the new control.

Circle 27 on Readers' Service Card

Valve literature

Ohio Brass Co. has available condensed catalog pages covering its complete line of bronze, globe, angle, check, gate, radiator and specialty valves. Material is so listed in the 12 pages that the reader can quickly find pressure ratings, recommended uses, features, and roughing-in dimensions for each valve in a wide range of sizes. Pages can be requested separately or in a set.

Circle 28 on Readers' Service Card

Gaslok power drive data

Literature describing the Gaslok power drive, a completely self-contained air or gas powered instrument drive and timing unit, has just been issued by American Meter. The unit is suited as either original or replacement equipment with all makes and types of recording instruments.

Circle 29 on Readers' Service Card

Lift truck cylinder folder

A six-page folder, describing its complete line of L. P. gas lift truck cylinders, is available from Linde. The folder includes descriptions,

operating data, and specifications for all Linde lift truck cylinders. Features and advantages of these cylinders are explained in detail. Pictures and diagrams are also included.

Circle 30 on Readers' Service Card

Engineering data sheets

Dura-Vent announces a new series of engineering data sheets that will be sent regularly to engineers, inspectors and installers of gas heating equipment. These data sheets will present problems that installers have sent to Dura-Vent at various times. The company welcomes any question or problem on gas heating and venting.

Circle 31 on Readers' Service Card

Industrial burners folder

The Iron Fireman series of air-ringing industrial burners, with built-in fuel and air systems, is described in a folder. Detailed cut-aways views, diagrams and photographs illustrate how the integral air register improves combustion and reduces installation costs. Dimensions are included.

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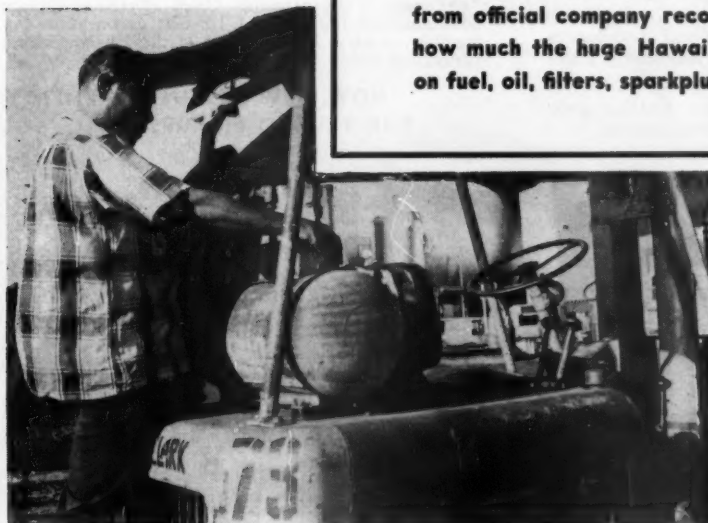
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LPG saves Castle & Cooke ***\$421 per forklift per year***

Here, for the first time anywhere, is the full story of the vast savings being made by Castle & Cooke Terminals since conversion of its entire 59 unit dockside forklift fleet to LPG. Figures taken by an industrial engineer from official company records show exactly how much the huge Hawaiian firm is saving on fuel, oil, filters, sparkplugs and overhauls.





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"The Ensign line is the backbone of my business. Once a job is installed according to Ensign standards, you can forget it. This valuable 'know-how' is part of the training all qualified Ensign dealers receive."

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You will find that the Ensign Carburetor Company has made great strides with a new factory to meet the demands for its products. It has also invested large sums of money in new educational materials — new sales literature, new service information, and new sales aids.

Ensign factory trained engineers and distributors are equipped with sales tools to help you along. Team up with Ensign today. Write the home office at Fullerton for the latest dealer information. Outline your effective working area when making your inquiry.

- (1) **BETTER CARBURETION--BETTER PROFITS**
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- (3) **ENSIGN IS OEM* ON AMERICA'S LEADING TRACTORS.**

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An Installation for Every Engine

*Ensign is the principal OEM (Original Equipment Manufacturer,) supplier of LP-Gas carburetion for the tractor industry. Become part of the Ensign selling organization today.

**NOW, NEW ENSIGN EQUIPMENT
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A new under-hood low profile Ensign air cleaner carburetor Model 758 is used with Ensign model HL, LP-Gas Vaporizer-Regulator, Ensign vacuum switch and solenoid for excellent starting, power and economy. Request complete data today.

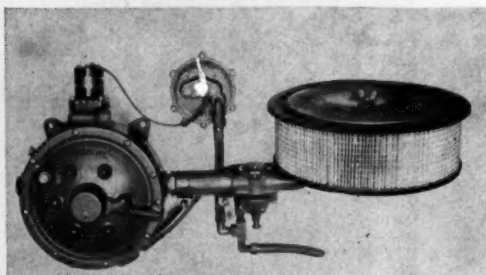
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The Castle & Cooke story: all 59 forklifts on LPG

By GEORGE B. TUGGLE • Vice President
Honolulu Gas Co. Ltd.

CASTLE & COOKE TERMINALS, Honolulu, Hawaii, subsidiary of the huge 107-year-old Hawaiian industrial, commercial, and agricultural giant Castle & Cooke Ltd., is saving \$421 per year on each of 59 forklift trucks converted from gasoline to L. P. gas. This is no guess. It is a figure based on official company records, summarized in a report made by an outside industrial engineer.

Here is the full story.

The background

Honolulu is not the world's largest port by a wide margin, but with better than 2300 deepwater vessels making her a port of call annually, she is a substantial one and handles thousands of tons of cargo every day of the year. Her stevedores are well paid by any standard, and even if it were physically possible for them to hand-rattle the daily mountains of materials on and off the dock-fronts, the cost of such methods would be out of this world. In company with American activities everywhere, she has turned to the forklift with its mechanical mus-

cles to provide the necessary speed and economy.

One of her chief instruments in the freight-handling business is a servant of long-standing and widely-varied usefulness, the firm of Castle & Cooke Ltd., which, through its subsidiary of Castle & Cooke Terminals, moved better than 2 million tons of cargo across her docks in 1957. The history of Castle & Cooke Ltd., like that of many and many another American firm, makes fascinating reading to anyone whose heart-strings respond to tales of shaky beginnings, determined and honest efforts, well-calculated gambles and ultimate successes, for it includes all of these as well as a record of community service both as a company and as a group of individuals which justifies its present position as a pillar of Hawaiian business life.

Today, in the 107th year of its life, Castle & Cooke Ltd. finds itself interested in the varied—and for the most part Hawaiian—fields of sugar, pineapple, macadamia nuts, tuna, insurance, power equipment and stevedoring. Today's stockholders' equity totals right at \$23 million.

The stevedoring interest grew out of Castle & Cooke's long association with the Matson Navigation Co. which began one June day in 1907 when Captain William Matson came ashore in Honolulu looking for an agent. This association has endured (without written agreement until 1929) up to the present. In 1936 Matson decided that providing its own stevedoring and terminal services in Honolulu was impractical and sold its local operation to Castle & Cooke Ltd., which organized Castle & Cooke Terminals for the purpose.

The introduction to LPG

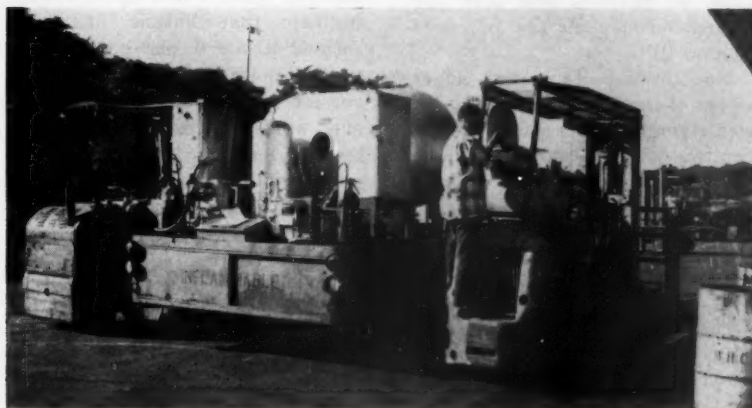
Interest in LPG first arose in 1951 when Al Hanson, maintenance superintendent for Castle & Cooke Terminals, began studying its possibilities. Prior to 1951 such a study was without point, for all LPG up until then had been shipped from the Mainland in small pressure containers and its price was high. In 1951, however, an adequate supply at lower cost was provided when Pacific Refiners Ltd. was incorporated and began importing butane dissolved in a blend of asphalt and diesel oil. Up to 9 per cent butane could be carried in the blend by standard tankers, and butane was entirely acceptable in a land where 60 deg. F is bitter cold.

Al Hanson was moved on to an industrial engineering position before he could get any test program under way, but his place was taken by another man with enthusiasm and a critical eye for costs, Stan Hornbuckle, who after investigation into automotive use of LPG on the Mainland, recommended that it be tried by Castle & Cooke Terminals in Honolulu.

The first conversions

Working with Red LaFrentz, who came from an LPG operation in southern Utah to act as Pacific Refiners' superintendent of LPG distribution, Castle & Cooke Terminals made its own conversions on three Clark 7000 lb forklifts at the beginning of 1955.

The conversions were minimal, consisting of vaporizers, LPG carburetors, and a heat block be-



An LPG-powered forklift is fueled from Castle & Cooke Terminals' fuel-dispensing truck, which makes two trips around the docks each day. The first trip begins at 6 a.m., the second at 4 p.m.

TABLE 1. OIL CHANGE COSTS—LPG VS. GASOLINE

	LPG		
	Gasoline	Converted	New Engine & Overhauled Engine Conversions
Hours between oil changes	100	2000	3000
Cost of oil change per 100 engine hours	\$1.67	\$0.08	\$0.056
Savings per 100 engine hours		\$1.59	\$1.61

tween the existing manifolds. Two of the Clark forklifts were left at their original 6.7:1 compression ratio; the other boosted to 8.0:1.

From February 1955, until the following June these three forklifts were watched closely for comparative operating results and effect upon personnel. They had so proved their worth by June that it was decided to convert 45 of Castle & Cooke Terminals' 6000 and 7000 lb machines to butane.

A check with the territorial fire marshal, Coast Guard officials, and its own insurance carriers assured Castle & Cooke Terminals that butane was considered as safe as gasoline in all locations except aboard ship, where its use was forbidden to them by the Coast Guard.

The fixed tank decision

The conversion was to consist of a fixed 16 gal. fuel tank, a converter, an LPG carburetor, a solenoid fuel shutoff, standard manifolds with heat block and standard cylinder heads which provided a 6.7:1 compression ratio. With butane as fuel, a higher compression ratio did not provide sufficient benefit to offset its first cost.

After much consideration it was decided that fixed fuel tanks would be filled from a tank truck which would also carry gasoline. Since the forklifts are spread out over a couple of miles of waterfront it was logical to take the fuel to the forklifts rather than vice versa, and the bulk problem posed by interchangeable tanks

crossed them out of serious consideration.

A further disadvantage in the use of interchangeable tanks arose from their exchange requiring substantial effort at a height of 4 or 5 ft from the ground. Castle & Cooke Terminals did not consider such a working practice economical.

Red LaFrentz of Pacific Refiners helped Castle & Cooke Terminals lay out an LPG dispensing unit, consisting of a 500 gal. tank with pumping and metering equipment. This was mounted on a special flat-bed truck along with a similar unit for gasoline. In operation, this truck called daily at Pacific Refiners' (now Honolulu Gas Co.'s) loading rack and made two trips around the docks, one starting at 6:00 a.m. and one at 4:00 p.m. Since Pacific Refiners' loading rack was less than a quarter of a mile away, no storage was provided at Castle & Cooke Terminal's base yard.

The big conversion

The conversion of the forklift engines to the use of LPG was accomplished by Castle & Cooke Terminal's mechanics as equipment and time allowed. By Jan. 1, 1956, 42 vehicles had been converted. Today 59 are in operation on LPG.

No training other than supervision of the first few installations was given the mechanics. No difficulties were encountered in the process except that early carburetor adjustments, done by sight and hearing and "feel" as had

been the practice with gasoline engines, consistently ran on the rich side. Stan Hornbuckle considered this state of affairs with a jaundiced eye and quickly bought additional exhaust analyzers, which are now used for every carburetor setting.

The cost-saving analysis

By the end of 1957, Castle & Cooke Terminals felt that sufficient experience was at hand to provide reliable data and conclusions on the beneficial (or otherwise) results of the program. An industrial engineer from Castle & Cooke Ltd. (the parent company), without prior stevedoring connections and presumably free of personal bias, was assigned to make an analysis. Working entirely from official company records he produced in February 1958, a revealing and thorough report which was pleasing to both Castle & Cooke Terminals and the Honolulu Gas Co., which in the intervening time had purchased the LPG distribution business from Pacific Refiners.

Principal aspects reported upon were fuel consumption, oil changes, oil consumption between changes, oil filter and sparkplug life and overhauls, together with their costs.

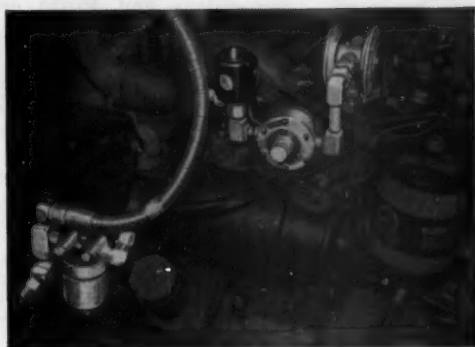
The saving in fuel cost

Comparative fuel consumptions in gallons per engine hour turned out to be: gasoline, 0.941; butane, 1.121. (Allowing 129,000 Btu per gal. for gasoline and 103,000 for butane, these consumption rates indicate that butane has performed about 5 per cent better than gasoline in its energy-conversion characteristics. However, since the cost of butane was less per gallon (almost exactly two-thirds that of gasoline at the time of the study), the net result of using butane was a saving of 5.9 cents per engine hour.

The forklift fleet in 1957 averaged 11.5 hours of operation per working day for an average total of 2900 hours for the year per vehicle. The total dollar saving per vehicle for fuel alone thereby came to $2900 \times 5.9 \text{ cents} = \171.10 in that year.

TABLE 2. OIL CONSUMED BETWEEN CHANGES—LPG VS. GASOLINE

	LPG	
	Gasoline All Engines	Old Engine Conversions
Quarts of oil consumed per 100 engine hours	5.76	2.88
Cost of make-up oil per 100 engine hours	\$1.93	\$0.96
Saving per 100 engine hours		\$0.97



The Best Known Is Best To Sell—Zenith is the oldest and most experienced manufacturer of industrial engine carburetors. This experience has been applied to LP-Gas Systems to deliver all the advantages of this fuel.



Clark, a foremost manufacturer of materials handling equipment, now offers a complete line, with capacities from 2,000 to 5,000 lbs. using Zenith LP-Gas Systems. Zenith Conversion Units are for all makes and types.

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Zenith LP-Gas Conversion Systems for materials handling equipment offer exceptional profit possibilities . . . Here are facts—*

1. Materials handling equipment powered by LP-Gas has increased tremendously.
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 - a) Zenith conversion units give trouble-free performance—keep operators satisfied.
4. Zenith, leading manufacturer of industrial carburetion for many years, applies this experience to its LP-Gas conversion units.
 - a) Zenith conversion units are for all makes of lift trucks, tractors, and industrial engines.

Get the complete story. Write us now for information on conversion units for materials handling equipment. LP-Gas Sales Department, Zenith Carburetor Division, 696 Hart Avenue, Detroit 14, Michigan. *Reg. U. S. Pat. Off.

Zenith Carburetor Division



The saving in oil changes

The most impressive percentage improvement showed up in oil consumed in oil changes. It had been standard practice for years to change oil in gasoline-driven engines once every 100 operating hours. The oil was always discolored by gums and solids at change time. As engines were converted to LPG, however, a new era completely at odds with the old set in, and long-time mechanics at Castle & Cooke Terminals—including Stan Hornbuckle—had to toss some of their experience-based notions out of the window.

Oil change figures from the official records are shown in Table 1.

The between-change periods of 2000 and 3000 hours for old-engine conversions and new-engine conversions were established from reports on oil samples from the Faber Laboratories in Los Angeles. I have in front of me a photostatic copy of a Faber report on a sample of oil taken from Forklift H-64 (a new-engine conversion) after 3194 hours of operation. It is reported as "clean." Its "depositing solids" are reported at 0.4 per cent and its "sludge index" at 0.5 per cent, both at about 50 per cent of the values at which an oil-filter change is recommended by Faber. Its viscosity is reported at 240 Faber seconds, still within the band of 216-340 seconds for SAE 30 oil (which it originally was). It would be difficult to justify changing such oil on any grounds except that it seems against all conscience to expect a crankcase lubricant to serve longer.

Castle & Cooke Terminals, for routine determination of crankcase oil condition, uses a blotter test. Samples sent out to Faber Laboratories were also given the blotter test, and by comparing the two results it was determined that sufficient control was given by blotter to serve practical purposes. The blotter test for the oil sample of the Faber report mentioned above is pictured elsewhere in this article.

Another substantial saving was made in oil consumed between oil changes. Table 2 tells the story.

It is noteworthy that old engines converted to LPG consumed only one-half as much oil as the average of all (old, overhauled, and new) engines operated on gasoline. New and overhauled engines converted to LPG consumed between one-fifth and one-sixth as much as the average gasoline-driven engine.

The actual savings in dollars and cents would depend upon the relative numbers of new, overhauled and old vehicles. That figure is not available to me separately, but here are some that are based upon overall averages and express the same idea in terms of comparative engine-hours per quart of oil added. It must be remembered that the period 1953-1955 included three distinct periods, (1) 1953-1954, all engines on gasoline, (2) February-June 1955, three test machines on LPG and 42 still on gasoline, (3) July-December 1955, the number of machines on LPG gradually increasing from three until by Jan. 1, 1956, 42 out of 45 had been converted. In 1957 all machines were on LPG.

Engine-Hours per Quart of Make-up Oil

1953-1955	17
1957	42.6

The saving in man-hours

The increase in oil-life has also produced an appreciable saving in man-hours of labor. Before the forklifts were converted to LPG it was necessary to have a two-man crew going from pier to pier changing oil. This procedure resulted in an expenditure of about one man-hour per change, and each forklift required a change once every ten days to two weeks.

With LPG as fuel, the oil-changes are made at intervals of from eight months to a year and are made at the shop as part of a routine in-shop period. The out-

side oil-change crew has been eliminated and the labor used for each change has dropped from one man-hour to $\frac{1}{4}$ man-hour. The saving in wages amounts to \$7200 per year for Castle & Cooke Terminals.

The saving in filters and plugs

Smaller but still notable savings have been made in oil-filter cartridges and spark plugs. The cost of filter cartridges has dropped from \$0.80 per 100 engine-hours on gasoline to \$0.04 on old-engine conversions and \$0.025 on new and overhauled engine conversions.

Spark plug costs have decreased from \$1.20 per 100 engine-hours on gasoline to \$0.12 on butane.

The saving in overhaul costs

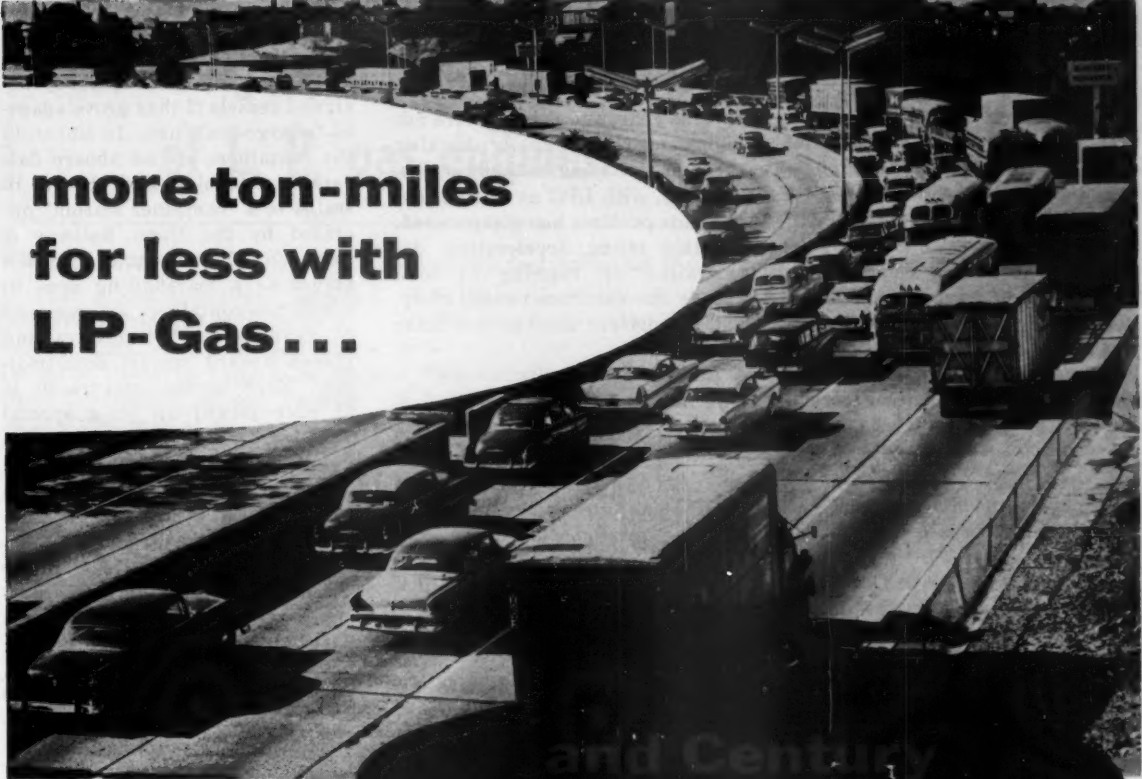
The last major point covered in Castle & Cooke Terminals' survey is comparative overhaul costs, and their figures on that are happily indefinite. They know that gasoline-driven engines had to be overhauled every 4500 hours on the average, for that is a matter of record. It is now only about three years since the LPG operation was begun in earnest, and sufficient operating hours (at an average of 2700 per year) haven't yet piled up on the new or overhauled engine conversions to require a subsequent overhauling. Castle & Cooke Terminals estimates, however, that the average period between overhauls will be in excess of 10,000 hours. At a cost of \$400 per overhaul, overhaul costs with LPG would thereby run \$4.00 per 100 hours; with gasoline, \$8.88.

The total saving

We have now discussed Castle & Cooke Terminals' operational savings from the use of LPG as separate and distinct items. What is the cumulative value of these savings and will it justify the required initial investment?

TABLE 3. DOLLAR SAVINGS FOR FORKLIFT OPERATION—LPG VS. GASOLINE

Total engine-hours per year (52 forklifts)	140,000
Engine-hours per forklift per year	2,700
Saving per engine-hour per year using LPG	\$0.1562
Total saving per year (52 forklifts)	\$21,868.00
Saving per forklift per year	\$421.00



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Castle & Cooke . . . Coast Guard says okay

In answer to the first question, Castle & Cooke Ltd.'s industrial engineer's report (made in February 1958) is shown in *Table 3*. It covers the period of all-LPG operation.

In answer to the second question, the industrial engineer's report states that at the rate of saving shown in *Table 3*, the cost of converting 52 forklifts and purchasing a special delivery truck to service them would be amortized in about 18 months of operation.

Money, or the thought of it, has predominated in all the foregoing paragraphs. And rightly so. For, other things being approximately equal, it is money or the lack of it at the bottom of the annual profit and loss statement that determines whether we stay in business or not. The "other things," however, are of importance, and two of them stand out in forklift operations around closed warehouses stacked with valuable goods, namely, exhaust fumes and fire hazard.

The reduction of fumes

Castle & Cooke Terminals' approach to the fume problem has been more practical than scientific. Out of curiosity rather than a sense of need, it made one check of comparative carbon monoxide contents in the exhaust gases of a gasoline engine and LPG engine. Both engines were well warmed up and both were turning over at 1800 rpm. The percentages of CO under these conditions proved to be very much alike. Stan Hornbuckle admits that the test was most inconclusive, but why, he asks, should an exhaustive investigation be made when everyday observation around the docks shows the LPG machines to be so much more preferable.

When gasoline was the fuel, a gunned engine gave off a burst of blue smoke of less or greater intensity depending upon its age. These fumes were irritating to the eye and nose. A goodly part of a forklift's operating life is spent in

reverse gear, and drivers were not happy over continually backing through irritating exhaust smoke.

Today, with LPG as engine fodder, this problem has disappeared. Whether idling, accelerating, decelerating or running at load speeds, the exhausts remain clear, and the drivers like the new state of affairs.

The safety factor

As has been mentioned, Castle & Cooke Terminals was assured by its insurance carriers, the fire marshal, and the Coast Guard that for use around the docks and warehouses LPG was considered no more hazardous than gasoline. Stan Hornbuckle says that in spite of these assurances he approached the conversion with the mixed feelings of the average male approaching marriage: it was generally considered advantageous but was still charged with unknown potentialities that could only be evaluated through his own experience.

Today, Stan is uncertain no longer. LPG to his mind is probably safer than gasoline. For one thing, LPG tanks are rugged pressure vessels. Gasoline tanks are not. Castle & Cooke Terminals has experienced accidents in the past wherein gasoline tanks have ruptured and spilled their contents. LPG tanks would have been dented. Both gasoline and LPG can escape through leaks, but LPG cannot accumulate except in very quiet, enclosed spaces. LPG has such a distinctive odor (added, of course) that it is quickly spotted at very low concentrations. Castle & Cooke Terminals has had no untoward incidents with LPG in their three and one half years of experience with it.

The future of LPG

A promising further step in the unitization of freight lies in the use of cargo containers. The Matson Navigation Co. is now testing out standard cargo containers, approximately 8 x 8 x 20 ft in size, between Hawaii and the Mainland.

For the present, the containers are being carried as topside load by existing cargo vessels, but will move below-decks in specially designed vessels if they prove adapted to large-scale use. In Honolulu the containers are set aboard flatcars at shipside and drawn in trains to a "container station" operated by the Oahu Railway & Land Co. This container station serves as a marshalling area in which the containers are removed by crane from the flatcars and placed aboard special semi-trailers. Each loaded semi-trailer is at once picked up by a special yard tractor and spotted in an outgoing area from where it will be taken by commercial tractor to its ultimate destination.

The special yard tractors are being provided by Castle & Cooke Terminals. To handle their marshalling duties properly and keep pace with the crane, the tractors have been designed for power, agility and ease of control. A 160 hp V-8 engine, automatic transmission, power - brakes, power-steering and a power-operated fifth-wheel enable the driver to work rapidly, continuously and with a minimum of fatigue. It is significant that these yard tractors, destined for a strenuous stop-go, backward-forward, wheel-and-turn existence have been equipped for burning LPG.

With LPG performing so well in all ways on the waterfront, Castle & Cooke Ltd. has been moved to consider it for automotive work on plantations. Here, however, work is seasonal, and the group of 37 trucks studied proved to have a daily average operating time of only 1.77 hours over the span of a year. This compares with 11.5 operating hours per day for the forklifts during 1957. At 1.77 hours per day, it was estimated that almost 10 years of use would be required to pay for the cost of conversion plus that of storage and delivery equipment.

For the time being, Castle & Cooke Ltd. has tabled the idea of plantation use, but feels that a change in operating conditions could quickly make it feasible, for they are convinced that, if given half a chance, LPG will pay its way. ■

Handling operating problems of L. P. gas engines

Clogged filters

Fuel filters sometimes become completely clogged with finely divided, black, scaly material. This is more likely to happen in the first few months of service with a new unit than at any later time, and also is a more prevalent trouble with tractors and other vehicles which are used on rough terrain, where the pitching around keeps the fuel in the tank agitated. This picks up the rust, and carries it into the fuel line.

A least a small amount of rust is present in every LPG tank, at the time it is delivered. It is inevitable that some corrosion

close the fuel valves at the tank, open the drain, and allow the fuel in the line to blow the sediment out.

Occasionally, a filter will be

packed so tight with impurities that the line pressure will not clean it. In these cases it is necessary to remove the bowl, and clean the filter element by hand. As is customary with gasoline filters, a new gasket should be installed between the bowl and the filter body.

Testing for leaks

Whenever any joint in the fuel system is opened and put back together, it should be tested to make sure that there are no leaks.

PART SIX

This is the last of six parts

should occur, following the required hydrostatic test, in which the tank is filled with water and subjected to high hydraulic pressure to make sure that it does not leak, and is capable of holding the pressure of the L. P. gas.

Most tank manufacturers now try to minimize this trouble, by putting the tanks through a dehydrating oven, or drying them out with a blast of heated air. Even then, some corrosion occurs before the tank is filled with fuel.

This rust is the principal ingredient in the solid matter which is found in the fuel filters. Corrosion is negligible after the tank is placed in service, because of the absence of oxygen in the closed fuel system, so after the preliminary rust is carried out with the fuel, there is seldom any more trouble.

The fuel filter has a drain plug or cock near the bottom of the bowl, through which the accumulated impurities may be blown out. Recommended procedure is to



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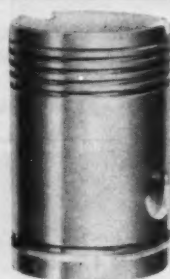
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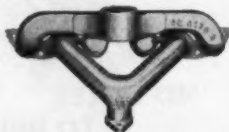
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Closed flow check valve

One of the most frequent causes of lack of fuel at the carburetor is the closing of the excess flow check valve, which is located inside the tank back of the liquid outlet valve. Its purpose is to shut off the flow of fuel automatically if any damage should occur that would allow fuel to escape through the line at a rate materially higher than that normally consumed by the engine.

Opening the liquid fuel valve too quickly when the pressure is high in the tank, but low in the line and regulator, causes this excess flow check valve to snap shut. It may be opened by closing the liquid fuel valve, then striking the tank (never strike the valve) a sharp blow with a mallet, stick, hammer, or some other heavy object. The plunger of the excess flow valve will fall open with an audible click. Normal fuel flow through the line may then be obtained by opening the liquid fuel valve just a crack, and waiting a minute for the pressure to equalize in the line, after which the liquid valve may be opened as rapidly as the operator desires.

All owners should be instructed in the correct way to open the fuel valve, as described above, to prevent closing the excess flow valve, and in the method of opening it if it should accidentally become closed.

Regulator freezing

Lack of fuel at the carburetor, accompanied by the rapid frosting or icing up of the regulator, may occasionally occur, either when a new installation is first placed in service, or after it has been in use for some time. This freezing of the regulator comes from only one cause—lack of sufficient heat to offset the refrigerating effect of the evaporating fuel.

We are told that the reduction of

temperature caused by the vaporization of enough propane to develop 100 hp is sufficient to lower the temperature of a four room house ten degrees. In order to maintain the same temperature in the regulator, it is therefore necessary to supply enough heat to raise the temperature of that same four room house ten degrees. That's a lot of heat, and it comes from only one source—the engine. That is why it is necessary to equip the propane engine with a high-temperature thermostat, and to connect the water circulation tubes to the regulator so there is a positive flow of the hottest available water—direct from the engine head.

If the freeze-up occurs immediately after starting the engine, it indicates that there is an "air-lock" in the vaporizer portion of the regulator, or that the water level in the radiator is very low. The water level in the radiator tank must be above the level of the regulator, or we can expect continuous trouble with air-lock in the regulator. With water at the proper level, the air-lock may be broken and normal operation restored, by disconnecting the water tube at the outlet side of the regulator, and running the engine until there is a normal flow of water coming out of the regulator.

If water fails to flow during the above treatment, it indicates stoppage in the water circulating system—possibly in the hose, or possibly in the regulator housing. The hoses in the regulator water circuit will eventually develop sponginess of the inside lining, exactly as radiator hoses deteriorate in the course of time. For this reason, it is advisable to use the best possible grade of car heater hose in the regulator circuit. It is lined with a water-resistant synthetic material which has several times as long life in this service as garden hose.

In regions where alkalai water is used in radiators, freeze-ups frequently occur from the deposition of water-borne solids in the regulator housing. Operators in these areas should bear in mind that they will avoid trouble in both their radiators and their propane fuel systems, if they will use a good radiator water inhibitor con-

stantly. In selecting this inhibitor, its reaction with any anti-freeze compound used in the radiator should be known in advance, to avoid jelling of the water. The safest procedure is use anti-freeze and inhibitor produced by the same company.

It should be unnecessary to caution against the use of dirty water in radiators, yet this happens quite frequently, particularly in irrigated areas, where it is easier to scoop up a little ditch water which may be "too thick to drink and too thin to plow." Silt seems to have an affinity for the water passages in the regulator. Choked up regulators must be disassembled to be cleaned thoroughly.

Oil in fuel passages

Once in a great while the fuel passages in a regulator will accumulate quantities of heavy, dirty looking oil. This trouble is intermittent as well as infrequent. It comes from the presence of compressor oil in the fuel, and it only becomes bothersome about the time the compressor with which the fuel is liquefied is due for an overhaul. Most producers are very particular in their maintenance work on compressors, so this trouble is becoming less frequent. The oil causes trouble in the regulator only after it has accumulated in sufficient quantity to alter the reactions of the secondary diaphragm, making it sluggish, upsetting the idling, and causing excess fuel consumption.

Whenever the regulator is mounted higher than the carburetor, providing a downward slope in the fuel tube, so oil settling in the fuel tube will drain into the engine instead of returning to the regulator chamber. When the regulator is mounted lower than the carburetor any oil deposited in this way will flow back into the regulator. Such installation should have, as regular maintenance routine, the periodic drainage of the secondary regulator chamber, or if no facilities for drainage have been provided, they should be flushed out through the dry fuel outlet with gasoline, kerosene, or light solvent. The residue of this solvent should be blown out with compressed air, being careful not to

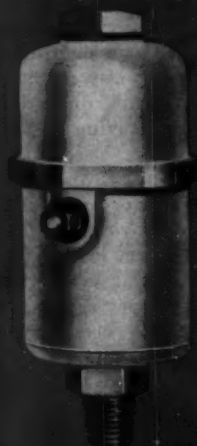
damage the regulator diaphragm by mechanical contact.

The discussion in this series of articles has been intended to cover primarily the operating troubles which may occur in any propane carburetor installation, regardless of make. Most of these difficulties may be overcome or corrected without removing the fuel units from the engine. As has been apparent, the troubleshooter can handle these situations with the minimum of tools and testing equipment. In fact, a good understanding of en-

gines and ordinary common sense are far more important than anything else.

For situations requiring the disassembly of regulators, the manufacturer's instructions should be on hand, and they should be followed carefully to avoid troubles which can arise as the result of very simple errors. As with gasoline carburetors, the use of factory replacement kits is a great aid in getting the job done right. The adjustments are exacting and the tolerances are limited, and the job

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should always be checked against specifications, using either the special gauges which some manufacturers provide for their regulators, or working to the required dimensions with a depth gauge and a straight-edge.

The final test that the job has been done right is the ability of the primary valve to hold the required maximum pressure, and the ability of both valves to open following the specified drops in pressure. The 0-300 lb gauge previously mentioned in the list of minimum equipment is needed for the maximum pressure test. For field service work, it may be connected into the fuel line anywhere ahead of the regulator. For a shop set-up, it is much more convenient to mount it permanently in a compressed air line supplying pressure above 200 psi.

With the line pressure working against the regulator primary valve, and the low-reading gauge showing the primary outlet pressure, we can now make the final check of regulator performance by measuring pressure necessary to

TABLE 4. OPENING PRESSURES FOR SECONDARY REGULATORS

Make and Model	Opening Pressure, inches water column.
Algas—1500-E and 1500-P	—4 to —.6
Algas—880, 1150, and 1290	—2 to —.5
Beam	adjust for best idle
Cyclone	adjust for best idle
Ensign—B	—3/16
Ensign—W, R, and S	—3/16 to —1/4
Marvel-Schebler (Roadmaster)	adjust for best idle
National—100 and 200	—3
A. O. Smith (Hughes)	—5 to —2

open the secondary regulator valve. This is done by means of a rubber tube connected through a "Y" fitting to one side of a water manometer, the tube from the other branch of the "Y" going to the breather hole on the regulator housing. The "positive pressure" regulators — Beam, Cyclone, and Marvel-Schebler (formerly Roadmaster) should make an audible hiss, due to escaping gas or air, as soon as the pressure comes up into the primary valve. By sucking on the breather hole through the rubber tube, the valve may be closed. This is indicated when the hissing sound stops. The drop in pressure required to close the valve is read on the manometer scale. This negative pressure exactly offsets the positive pressure from the opposite side which caused the valve to remain open. Bench setting should be about —.5 in wc. Final adjustment with engine running should give best idle.

In all other makes of regulators, the secondary valve is normally closed when fuel is not being withdrawn by the carburetor. The drop in pressure on the gas side necessary to open the valve is deter-

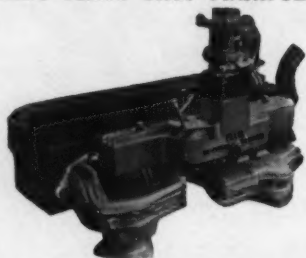
mined by blowing into the breather hole, and reading the manometer at the time the hiss is heard.

The opening pressures for the secondary valves in most makes of regulators are given in Table 4.

There is a well known gag about the old man who was thankful that most of his troubles had never happened. That's the way it is with men, and with engines, whether they operate on L. P. gas, gasoline, or diesel oil. Some men go through life with no more serious diseases than dandruff and occasional halitosis, and finally die because their mainsprings run down. Others acquire arthritis, gallstones, ulcers, and housemaid's knee from going to the wrong places.

Engines are individuals, just as men are. Their troubles can not be successfully treated until the doctor recognizes them for what they are. So, in the preceding months' discussion of L. P. gas engine ailments, we have skipped lightly over the troubles that the gasoline engine man should recognize because they are engine troubles, and have tried to give adequate coverage to the difficulties which may be unfamiliar to the serviceman because

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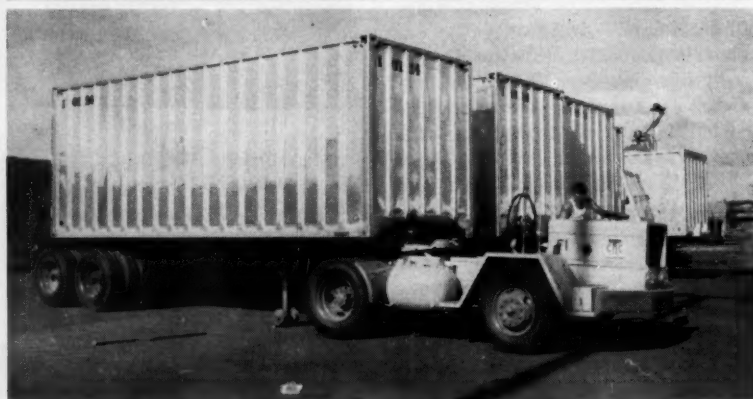


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Here is one of Matson Navigation Co.'s new cargo containers, mounted on its semi-trailer and being spotted by one of Castle & Cooke Terminals' new LPG-powered yard tractors.

they originate from the nature of the different fuel, or from the equipment which is necessary to control that fuel. In actual experience, the average amount of trouble with L. P. gas carburetion equipment is considerably less than with gasoline carburetion, once the man on the job understands the units. ■

Dockery will represent Beam in Florida

Alfred Dockery has been appointed southeastern factory warehouse representative for Beam Products Manufacturing Co.'s new warehouse in Florida.

The warehouse is located at 600 Plant Ave., P. O. Box 2, Port Tampa.

Mr. Dockery is well acquainted with carburetion accounts in this area having handled fuel for many years, according to Beam.

Automobile group opposes Federal gas tax hike

Strong opposition to the proposed increase of 1 to 1½ cents in the Federal gasoline tax was voiced recently by the American Automobile Association.

The increase has been recommended to the White House by President Eisenhower's economic advisors because of looming deficits in the Highway Trust Fund, established to finance the Federal portion of the expanded national highway program.

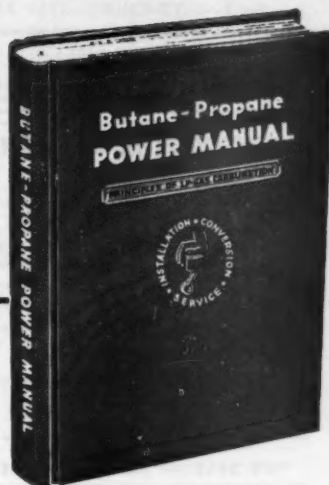
Frederick T. McGuire Jr., president of the AAA, said: "The proposed increase in the Federal gasoline tax would impose a double jeopardy on the nation's 57 million passenger car owners since many individual states are considering tax increases in order to match Federal-aid highway funds.

Chilton publishes auto rebuilding book

"Automobile Engine Rebuilding & Maintenance," by Harold T. Glenn, has been designed specifically for vocational educational classes for auto mechanics and auto machinists.

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Preston Grace

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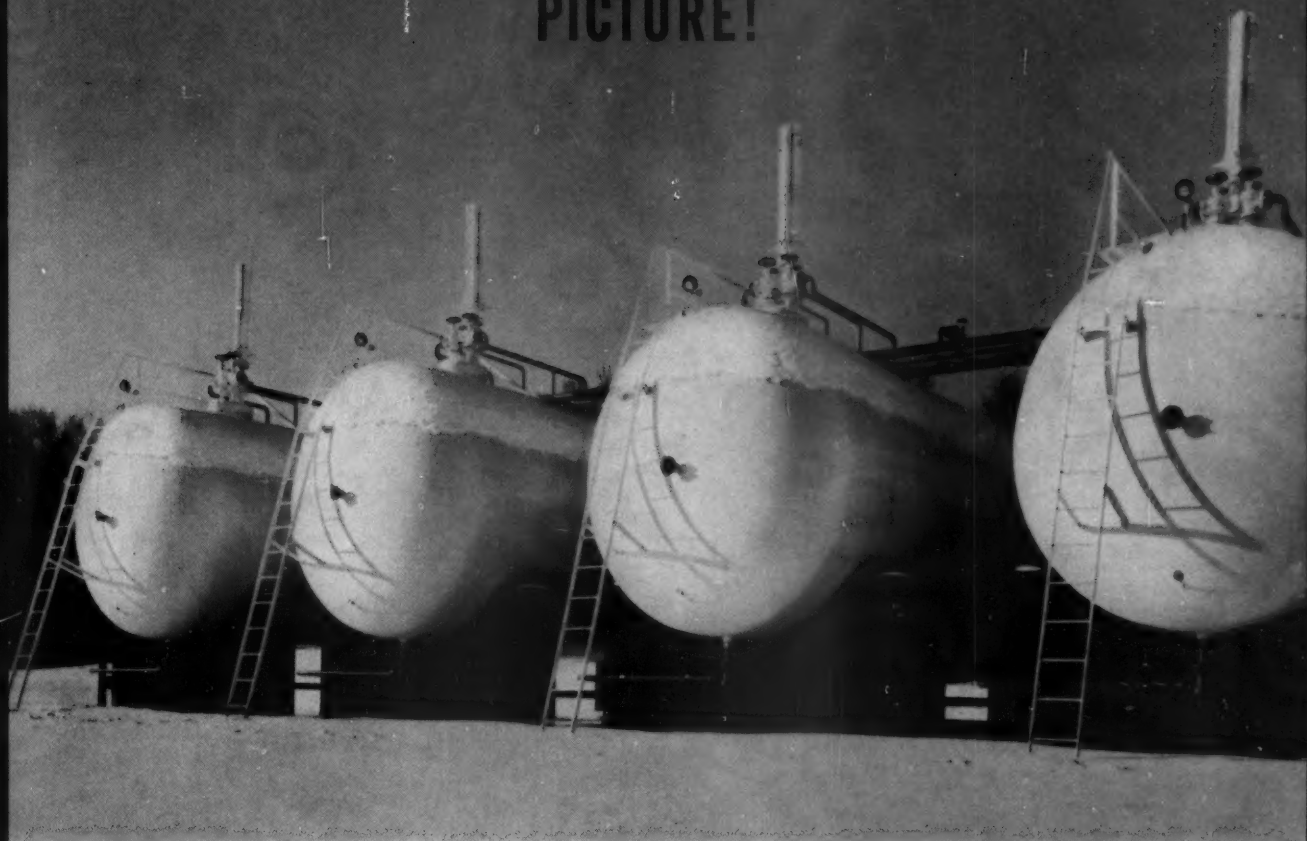
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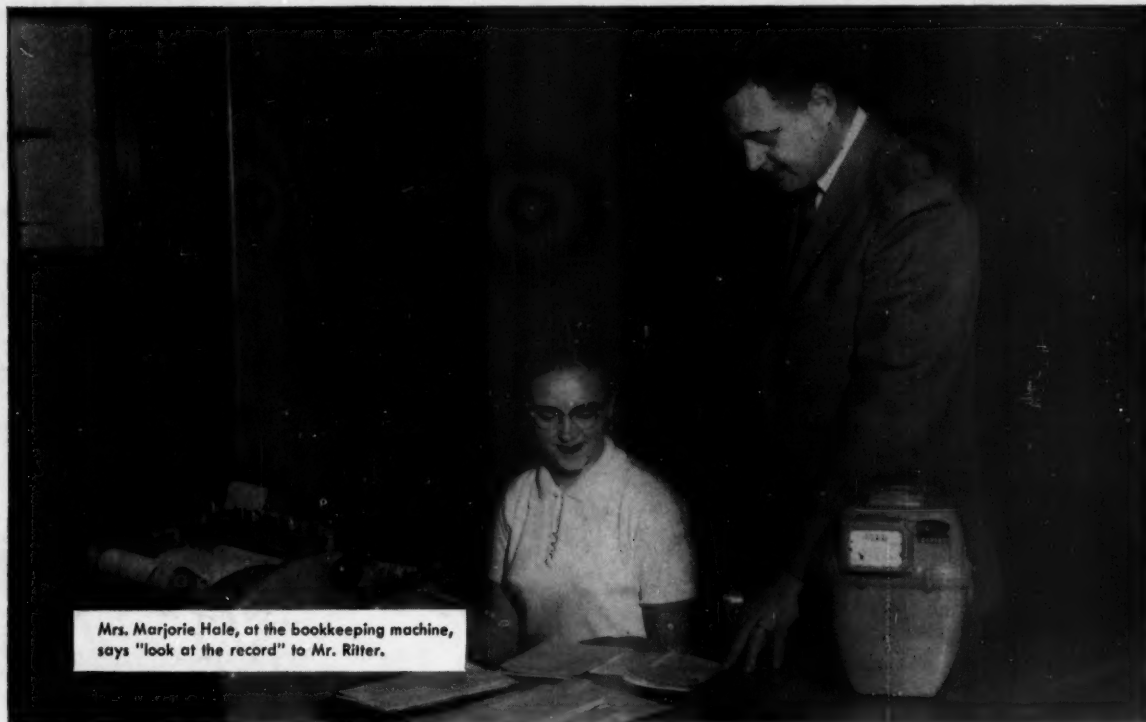
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